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ARTHRITIS OF THE MENOPAUSE

A STUDY OF FIFTY CASES *

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AND

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At the present time, chronic arthritis is usually classified with respect to its pathologic rather than its clinical manifestations. Pathologically, the disease may be divided into three groups: the hypertrophic, atrophic and periarticular forms. This classification has been widely accepted as a convenient way of differentiating the various types of lesions which chronic arthritis may display.

Comparatively little effort has been made to classify chronic arthritis into clinical groups. Within the last decade, the importance of focal infection in the etiology of chronic arthritis has been emphasized by McCrea,[1] Billings,[2] Rosenow [3] and others. Indeed, many of the modern writers on arthritis are disposed to look on all chronic inflammatory conditions of the joints as infectious. In any case, infectious arthritis has not been sharply differentiated clinically from other types of chronic arthritis.

During the last three years, 350 cases of arthritis have been admitted to the Cornell Pay Clinic. A careful survey of this material indicates that these cases can be divided into a series of clinical groups, each characterized by fairly definite clinical manifestations. These groups are:

1. The frankly infectious type, a polyarthritic form seen usually in young people, and characterized by periarticular changes and by the fact that the symptoms skip from joint to joint. Many cases of spondylitis also fall into this group. Foci of infection can be readily demonstrated in most of these cases.

2. The specific arthritides, including tuberculous, gonococcal and syphilitic arthritis.

3. Monarticular arthritis, usually in the hip, occasionally in the shoulder, often referred to as morbus coxae senilis, a destructive arthritis of the joint of unknown etiology but probably infectious. This type occurs most frequently in middle aged men and is often associated with a preceding trauma; it is extremely resistant to treatment.

4. True arthritis deformans, a progressive and destructive disease of the joints, characterized by ankylosis and deformity.

5. Senile arthritis, a hypertrophic form, occurring in elderly people and characterized by mild hypertrophic changes in the larger joints and in the hands. This type is extremely chronic and progresses very slowly.

6. Menopause arthritis, a chronic polyarthritis of obese middle-aged women, occurring at or just after the menopause and characterized by persistent stiffness and pain in the joints affected.

The present study is concerned with the last type described. The arthritis of the menopause has been one of the most frequent types of arthritis encountered in the Cornell clinic. In the series of 350 patients admitted to the clinic, 234 were females, and 116 males. Of the females, approximately one third fall into this group. Altogether, more than sixty cases of this form of arthritis have been under our observation. Of these, fifty typical cases have been selected as a basis for this study.

DISTRIBUTION

As stated above, this form of arthritis occurs only in middle-aged women, or in women with artificial menopause produced by some radical operation on the pelvic organs. The average age in the present series was 52½ years. The youngest patient was 42; the oldest, 66. There was apparently no racial predisposition. The Jews and the Irish contributed the largest number of cases, but these races are both well represented in the total attendance at the clinic. Ninety per cent. of the cases were in married women, 10 per cent. in spinsters. No typical examples of this form of arthritis have been encountered in the male. Middle-aged men do have arthritis, but the symptom-complex is quite different from that herein described.

ETIOLOGY

Menopause.—One of the most striking features of this disease is its apparently close connection with the menopause. Eighty-six per cent. of the cases occurred after the menopause, 20 per cent. immediately after, 14 per cent. within one year after and 26 per cent. within two years after. Only 14 per cent. of the cases developed before menopause, and in these cases the symptoms of arthritis preceded the change of life by only a short interval.

Obesity.—Next to its association with the menopause, the occurrence of obesity was the most frequently associated condition. The average weight for the series of fifty patients was 182½ pounds (82.8 kg.). The age-height-weight relationship was determined for twenty patients. The average height for this series of twenty patients was 5 feet, 3 inches (160 cm.); the average age was 50½ years; the average weight was 184 pounds (83.5 kg.), as compared with the average weight of 141 pounds (64 kg.) for women of this age and height. The weight was usually well distributed, but was perhaps most noticeable in the bust and abdomen. The maximum weight was 226 pounds (102.5 kg.), the minimum 132 pounds (60 kg.). In some of the

* From the Cornell Pay Clinic and the Second (Cornell) Medical Division of Bellevue Hospital.

1. McCrea, T.: Oxford Medicine 4: 367, 1921.
2. Billings, Frank: Chronic Focal Infections and Their Etiologic Relations to Arthritis and Nephritis, Arch. Int. Med. 9: 484 (April) 1912.
3. Rosenow, E. C.: The Etiology of Articular and Muscular Rheumatism, J. A. M. A. 60: 1223 (April 19) 1913.

patients, the increase in weight was not marked, so that while obesity probably plays a rôle in this disease, it cannot be looked on as an adequate explanation of the whole picture.

Occupation.—Practically all of the patients were housewives. Most of them were accustomed to doing their own housework. Very few of them engaged in floor washing or in other labor that kept them much on the knees.

Habits.—Many of the patients admitted that they were hearty eaters, but others said that in an effort to reduce weight they had cut the daily intake of food to a minimum. A considerable number confessed to a fondness for bread and sweets. There was no evidence that the condition was referable in any way to over-indulgence in proteins. The common stimulants, such as alcohol, coffee and tea, appeared to play no part.

Previous Illness.—None of the patients in the series gave a history of rheumatic fever. One patient had been subject to attacks of tonsillitis. Four patients reported having had tonsillitis once or twice. Three others reported susceptibility to sore throats, and seven were subject to frequent colds. Constipation was noted in twenty-seven cases. Chronic colitis occurred in only one case. Leukorrhea was present in a considerable number of cases.

PATHOLOGY

Thus far, there has been no opportunity for a study of the lesions incident to menopause arthritis. It is clear, however, from physical examination and from roentgenograms, that we are dealing with a form of so-called hypertrophic or proliferative arthritis. The knees have been the joints most frequently involved, but the fingers, shoulders, feet and lumbar spine are often implicated. In many cases, there is little or no periarticular inflammation or thickening. The disease affects chiefly the ends of the bones and the synovial membrane. Roentgenograms of the knee joints, for instance, show distinct lipping of the head of the tibia and, to a less extent, of the condyles of the femur. The spongy bone shows some rarefaction, but the hypertrophied portions are denser than normal bone. The synovial membrane is probably thickened, though we have no accurate information on this point. The synovial fluid is usually not increased in amount, but there may be exceptions to this rule.

SYMPTOMATOLOGY

The onset of menopause arthritis is usually insidious. The first symptom, as a rule, is a slight stiffness in the knees, noticed when ascending and descending stairs or on rising from a chair. The pain and stiffness gradually become more marked, and soon the patient experiences discomfort when walking or bending the knees. The pain and stiffness vary in intensity with different patients; sometimes it is slight and at other times severe; but these patients seldom resort to crutches and never become bedridden. The disease is usually of one or two years' duration when first observed in the clinic, for the onset is gradual, and the patient, busy with her duties in the home, has endured the mild discomfort of the early stage and has postponed search for medical aid.

In typical cases, the disease starts in the knees, and one of the most conspicuous characteristics of this type of arthritis is its persistent localization in the knee joints—differing in this respect from chronic infectious arthritis, which is more apt to shift from joint to joint. In 84 per cent. of the cases, the disease made its first appearance in the knees. It may start in the fingers or back; 14 per cent. in the fingers and 2 per cent. in the back. At the time these patients were admitted to the clinic, 98 per cent. complained of pain or stiffness, or both, in the knees. Sometimes the symptoms were much more marked in one knee than in the other, but in most cases the two knees were involved to an equal extent. Ten per cent. of the patients complained of pain and stiffness in the back, due to the presence of mild proliferative changes in the lumbar vertebrae. In 74 per cent. of cases, the patient suffered from more or less stiffness in the fingers, due to the presence of Heberden's nodes on the distal interphalangeal joints. In 10 per cent. of the cases, there were symptoms of arthritis in the feet, and this does not include the very large group with pes planus, which occurred frequently as a result of the patient's overweight. In 12 per cent., one shoulder was involved. In one case in this series, there were symptoms in the elbow; in another case, one hip was implicated. In four cases, sciatica was associated with the arthritis.

PHYSICAL EXAMINATION

The physical appearance of these patients is quite characteristic. They are almost always overweight, sometimes to a marked degree. As a rule, they have the appearance of robust good health. In a typical case, the lungs and heart are normal. Cardiac murmurs are extremely rare, a fact which would indicate that this form of arthritis has nothing in common with rheumatic fever. The abdomen is prominent; the abdominal wall, greatly thickened. There is also an excess of fat around the hips and breasts. The posture when standing is quite characteristic. The shoulders droop, and there is a curvature of the dorsal spine and lordosis in the lumbar region. The abdomen is thrown forward, and the feet are abducted, producing a distinct tendency toward knock-knee. Flat foot is an extremely common complication, being present to some extent in nearly every case.

Surprisingly few objective signs are noted in the joints. The knees may be slightly more prominent than normal, owing to hypertrophy of the heads of the bone. On flexion of the knees, a certain amount of crepitation is usually detected. Actual limitation of movement is extremely rare. Passive movements cause only moderate pain. This may be explained by the fact that there is little or no periarticular inflammation in these cases. If the shoulder is involved, crepitation will usually be noted here also. Involvement of the back is indicated by an inability to bend forward. One of the most interesting signs in this condition is the presence of Heberden's nodes, which occur in a high percentage of cases: in 74 per cent. of our series. These nodes appear on the distal phalangeal joints, and may occur on any or all of the fingers. They begin as small, tender elevations on the dorsolateral aspect of the terminal phalangeal joints, and from the first appear to be adherent to the periosteum. As time passes, the nodules take on a bony structure and become true exostoses.

ILLUSTRATIVE CASE

The following case is a good example of menopause arthritis:

Case 1.—M. G., a woman, aged 54, whose weight was 194 pounds (88 kg.), and height, 5 feet 2 inches (157.5 cm.), presented a negative previous medical history, except for extraction of all the teeth six years before we saw her. There was no history of tonsillitis or rheumatic fever. The onset of arthritis occurred ten years before, directly after the

menopause. The two knees became involved at about the same time, and pain and stiffness have persisted ever since. Physical examination showed normal tonsils, thyroid, lungs, heart and abdomen. Both knees grated on flexion, but were not enlarged. There was no redness or tenderness. Heberden's nodes were present on the distal phalangeal joints of both hands. All other joints were normal.

In this case, the syndrome that characterizes menopause arthritis is complete: a middle-aged woman considerably overweight, with arthritis coming on immediately after the menopause and involving the knees and distal phalangeal joints.

FOCI OF INFECTION

Foci of infection have occasionally been noted in this series of cases, but nothing in the history of the patient or in the character of the disease would indicate that this type of arthritis is infectious in origin. The tonsils appear to play no part whatever in the etiology of the disease. In a typical case, the tonsils are small and pale, and are often almost invisible. Only one case showed chronic sinusitis. In a recent monograph, Ely [4] maintains that hypertrophic arthritis is usually associated wi[illegible]rrhea and gingivitis. So far as menopause arthritis is concerned, however, we have been unable to corroborate the findings of Ely. In this study, no convincing evidence has been obtained that would show any etiologic connection between root abscesses or pyorrhea and this type of hypertrophic arthritis. Only nine patients showed pyorrhea, and only two had definite root abscesses. It must be emphasized, in this connection, that a large number of our patients had previously been deprived of all their natural teeth by physicians who hoped to relieve the arthritis by this procedure. Leukorrhea was noted in a considerable number of cases, but there were only three cases in which the gynecologist reported the cervix or endometrium sufficiently diseased to be a possible focus of infection. Constipation was noted in twenty-seven cases, a finding of no especial significance, as any group of middle-aged women would show an equally high incidence of this condition; and, furthermore, the correction of constipation did not influence the course of the disease. Only one case gave a history of chronic colitis.

DIAGNOSIS

The diagnosis of a typical case of menopause arthritis is quite simple. A middle-aged woman, considerably overweight, past the menopause, complaining of persistent pain and stiffness in the knees and often in the hands or feet, presumably falls in this group. If, in addition to these symptoms, the patient shows Heberden's nodes and crepitation of the knees, with proliferative changes about these joints in the roentgenogram, the diagnosis is no longer in doubt. This type of arthritis must be differentiated from chronic infectious arthritis, which occurs most frequently in young people and is characterized by periarticular changes and other evidence of an active inflammatory process. Infectious arthritis is usually migratory and polyarticular, and may involve practically every joint in the body. Infectious arthritis frequently attacks the elbows, wrists and metacarpophalangeal and proximal phalangeal joints. These locations are never involved in menopause arthritis. On the other hand, menopause arthritis shows a peculiar selective affinity for the knees, feet and distal phalangeal joints, where Heberden's nodes, if present, are always located.

4. Ely, L. W.: Inflammation in Bones and Joints, Philadelphia, J. B. Lippincott Company, 1923, p. 368.

TYPICAL CASE OF INFECTIOUS ARTHRITIS

The following protocol illustrates a typical case of infectious arthritis occurring in a middle aged woman.

CASE 2.—M. S., a Jewish woman, aged 52, weighing 181 pounds (82 kg.), had a previous medical history of three miscarriages due to endometritis; tonsillitis eleven months before; "rheumatism of the legs" fifteen years before, and chronic constipation. The menopause occurred two years before. The joint first affected was the right knee, followed by pain and stiffness in the left shoulder and the fingers of both hands. The duration of the attack was three weeks. Most of the teeth were missing; the tonsils were infected; the thyroid, lungs, heart and abdomen were normal. There was marked endocervicitis. The right knee joint was thickened and partially ankylosed, with marked crepitation. There was fusiform arthritis of proximal interphalangeal joints of both hands.

In this case, the patient was middle aged and overweight, and arthritis developed shortly after the menopause; but the joint symptoms were intimately associated with the history of tonsillitis, and the character and distribution of the arthritis are those of the infectious type.

True arthritis deformans is a comparatively rare disease. It may be differentiated from menopause arthritis by the fact that it often occurs before the menopause, is polyarticular, is progressive in character and terminates in deformity and ankylosis. Once menopause arthritis has been recognized as a type, the clinician is not likely to confuse it with true arthritis deformans.

The senile type of arthritis occurs in the aged of both sexes. Like menopause arthritis, it is hypertrophic in character, but is much more widely distributed in respect to the joints involved.

PROGNOSIS

The prognosis in menopause arthritis is fairly good. The progress of the disease is very slow; in some cases the process becomes apparently stationary. There is little, if any, tendency toward progressive involvement of other joints, a feature so characteristic of true arthritis deformans and of infectious arthritis. On the other hand, there is little tendency toward spontaneous recovery. These patients rarely become bedridden, but struggle on year after year, adapting their lives to their infirmity.

TREATMENT

The rational treatment of this type of arthritis, as of any type, will naturally depend on a correct solution of the etiology. Several theories have been considered in this connection. The infectious theory was seriously entertained, for the reason that chronic arthritis is now widely considered to be of infectious origin. Careful study, however, of this group of cases affords no basis for assuming that the arthritis of the menopause is infectious in type. These patients almost invariably show normal tonsils, and a surprising number of them have lost their natural teeth. There is no evidence that other foci of infection have played a rôle in the production of the disease. Middle-aged women, of course, can have and do have infectious arthritis; but, in our experience, this is comparatively rare. When seen, the infectious cases should be treated like any other case of infectious arthritis by removal of the focus of infection.

The constant involvement of the knees in this disease suggests that the mechanical factor may play an important part in its etiology. The greatly increased weight of these patients puts a considerable strain on the knees,

and this strain is increased when the patient's obesity brings about abduction and eversion of the feet. The factor of weight no doubt acts as an important predisposing cause and would explain why the knees are so constantly involved. The mechanical theory, however, will not entirely explain the condition, since the fingers, shoulders and back may also be implicated.

In view of the marked overweight which most of these patients showed, a diminished rate of metabolism might have been expected. In those cases, however, in which the basal metabolism was taken, there was no deviation from the normal. This is consistent with the observations of Means[5] and others, who have found that the metabolism is usually normal in obesity. The blood sugar, as well as the nonprotein nitrogen, uric acid, and creatinin, shows no noteworthy variations from the normal. This condition is not essentially a disease of metabolism.

The close association of this disorder with the menopause naturally suggests an endocrine origin. This conception is strengthened by the fact that this type of arthritis does not occur in the obese middle-aged man. The menopause and obesity are the dominant features of the picture, and, in all probability, both play an important part in the causation of the disease. Certainly the importance of obesity is clearly shown by the improvement which follows when the weight is reduced. The exact part played by the menopause we are not in a position to define. We are nevertheless confident that the menopause is deeply concerned in the production of the disease. The great importance of the menopause in its etiology is clearly shown in those cases in which the disease has developed directly after an artificial menopause induced prematurely by hysterectomy. Several such cases of premature menopause associated with arthritis have been under observation in the clinic. The following case is a good example:

Case 3.—E. L., a woman, aged 53, weighing 152 pounds (69 kg.), (15 pounds [6.8 kg.] more than the average for her age and height), had no history of tonsillitis or sore throat. All but nine of her teeth had been extracted seven years before. Those that remained were in good condition. She had no leukorrhea, and suffered from chronic constipation. Fifteen years before, she had undergone complete hysterectomy followed by an artificial menopause. Shortly afterward, there was a sudden onset of arthritis with pain and stiffness in both knees. This condition had persisted ever since. There was also pain in the fingers and thumbs. She was decidedly overweight. The tonsils showed no signs of infection. The teeth were in good condition. The chest and abdomen were normal. The knees were not enlarged, but there was distinct grating on flexion. Heberden's nodes had appeared on the distal interphalangeal joints of both hands.

This case, coming on after an artificial menopause, is similar in every respect to the cases which have appeared after the natural menopause, and lends support to the belief that the condition is of endocrine origin.

THE METHOD OF TREATMENT

Diet.—In the beginning of this study, the method of treatment that we employed was considerably influenced by the work of Pemberton,[6] who found that many patients with arthritis showed a diminished carbohydrate tolerance. Our patients were put on a low carbohydrate diet, consisting mostly of 5 and 10 per cent. green vegetables and unrestricted protein. Practically all of these patients were overweight, and under this regimen many were considerably reduced. With this reduction in weight, most of the cases showed distinct clinical improvement. We were, however, unable to demonstrate any increase in blood sugar in this particular group of cases, a fact which leads us to believe that it was not the decreased carbohydrate intake but the subsequent loss in weight that caused improvement.

Physical Therapy.—In the routine treatment of these cases, we have strongly emphasized the value of heat in all its forms. Daily hot baths, Turkish baths, baking and sun baths have all been advocated. Heat is a triple benefit; it increases the blood supply to the part, promotes elimination through the skin, and is itself an excellent anodyne. Massage has been used in a large percentage of the cases. If persisted in, it is usually beneficial. We have also noted that the benefits of massage are directly proportional to the skill and faithfulness of the operator. High colon irrigations have been used in quite a number of our cases, but appeared to have little effect on this particular type of arthritis. Roentgen-ray therapy was tried in ten cases of the series. No benefit was observed following the treatment, and some of the patients felt distinctly worse after the exposure.

Medical Treatment.—Iodids, in the form either of the potassium salt or hydriodic acid, have been administered in almost every case. While it is very difficult to judge the value of a drug when it forms only one part of a therapeutic regimen, we believe that the iodids, more particularly the hydriodic acid, are of distinct value in the treatment of menopause arthritis. The syrup of hydriodic acid was given in dram doses three times a day in water after meals. Potassium iodid was administered in the form of a saturated solution, 10 drops in water three times a day, after meals.

Vaccine Therapy.—In some cases we have tried a mild form of foreign protein therapy, that is, subcutaneous injections of typhoid vaccine or heated milk. In a few cases, an autogenous vaccine was prepared from a strain of *B. coli* isolated from the patient's stool. Very little benefit was obtained from this form of therapy.

Endocrine Therapy.—We are convinced that the endocrines play an important part in the production of this type of arthritis. The association of obesity with the menopause is a well recognized phenomenon. The type of obesity present does not suggest thyroid deficiency. These patients are just as apt to present the picture of hyperthyroidism as of hypothyroidism. Regardless of whether thyroid deficiency is instrumental in the production of this disease, we have found thyroid extract a valuable agent in reducing the patient's weight.

The relationship of the menopause to this form of arthritis naturally suggests ovarian dysfunction, and with this idea in mind, we have treated a considerable number of patients with ovarian extract or the whole gland. The results so far have been disappointing. The distribution of fat in some of these cases has suggested dyspituitarism. Desiccated pituitary gland in some cases and thymus gland in others were administered with entirely negative results.

RESULTS OF TREATMENT

In thirty-four cases of this series, we were able to observe the patient over a period of several months or even from one to two years. These cases were treated for the most part according to the regimen outlined above; namely, a green vegetable diet, hot baths,

5. Means, J. H.: The Basal Metabolism in Obesity, Arch. Int. Med. 17:704 (May) 1916.
6. Pemberton, Ralph, and Foster, G. L.: Studies on Arthritis in the Army, Arch. Int. Med. 33:243 (March) 1924.

hydriodic acid or potassium iodid and baking and massage. Twenty-seven out of the thirty-four cases showed definite improvement under this regimen. In the remaining seven cases, no particular improvement was noted. It would hardly be fair to say that any of these patients were completely cured by the treatment employed. Many of them, however, were made much more comfortable by this regimen. A few patients showed really remarkable improvement. The improvement is dependent on persistent continuation of the treatment.

CONCLUSIONS

1. The arthritis of the menopause is a definite clinical syndrome.
2. It is a chronic polyarthritis of obese, middle-aged women, occurring at or just after the menopause, and characterized by persistent stiffness and pain in the joints affected.
3. It is noninfectious in origin.
4. This form of arthritis appears to be definitely related to the endocrines, but the exact nature of this relationship has not been established.
5. The disease runs a mild chronic course.
6. Under a regimen consisting of iodids, low calory diet and physiotherapy, a majority of the patients have been definitely benefited.

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BLOOD PRESSURE MAINTENANCE IN SPINAL ANESTHESIA

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A fall of blood pressure accompanies each spinal anesthesia. It is the one possible danger associated with this form of anesthesia and may cause death. Its low point is usually ten minutes after the injection, and most fatalities have occurred at that time. After fifteen minutes, one is working away from the danger point, not toward it as in other general anesthetics. Given a reliable method of holding up blood pressure for the first fifteen minutes, and modern spinal anesthesia in trained hands is free of danger.

Epinephrin given intravenously is the only reliable drug in desperate cases of blood pressure collapse.

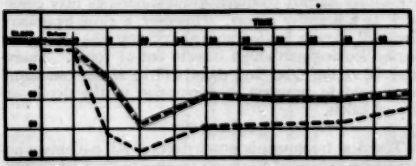

Chart 1.—Comparative value of ether and hypodermic stimulants in maintaining diastolic blood pressure: upper curve, ten minutes of ether; lower curve, pituitary extract, a proprietary preparation of digitalis, strychnin or caffein given hypodermically. In this and the accompanying chart, the curves are the average of thirty abdominal, pelvic and leg operations. The anesthetic employed was stovain, 0.05 gm., in the first or the second lumbar interspace. Supplementary anesthesia consisted, on the average, of one-half grain of morphin and one one-hundredth grain of scopolamin.

Promptly and properly administered, it will hold every case until the body vasomotor tone is naturally restored. But the occasional near fatality which every user of spinal anesthetics has seen has resulted in the clinical trial of many drugs and measures to anticipate this blood pressure drop.

Various stimulants have been given hypodermically immediately following the spinal injection as prophylactics; notably strychnin, caffein and pituitary extract subcutaneously, and epinephrin intramuscularly. Actual blood pressure tests prove them to be of little value.

The rapidly diffusing vasomotor stimulants ether, nitrous oxid and ammonia are proved vasomotor aids,

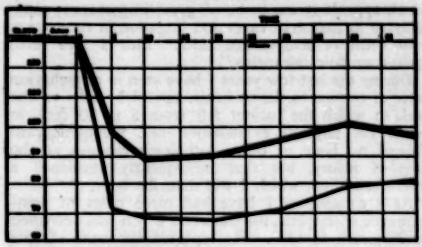

Chart 2.—Comparative value of ether and hypodermic stimulants in maintaining systolic blood pressure: upper curve, ten minutes of ether; lower curve, pituitary extract, a proprietary preparation of digitalis, strychnin or caffein given hypodermically.

and of value in the order named. The appearance of a patient under the first ten minutes of ether with bounding pulse, red face and raised blood pressure is the exact opposite of the pallor and hypotension of the first ten minutes of spinal anesthesia. Our series of cases show that ether inhalation maintains blood pressure, more consistently, following spinal stovain anesthesia, than any of the usually employed hypodermic stimulants. The ether is given for ten minutes. During the last two years we have used primary ether anesthesia as a routine in all suspected bad risks, especially in upper abdominal cases; i. e., gallbladder and stomach surgery. It has an added advantage in blocking out consciousness when the preliminary morphin narcosis is not effectual, and so lessens psychic shock. The average blood pressure chart of thirty recent abdominal, pelvic and leg operations, when primary ether was given, shows a gain of eight points in the diastolic (Chart 1) and twenty points in the systolic (Chart 2) blood pressure over the thirty cases in which hypodermic stimulants were used.

Nitrous oxid similarly used gives an abrupt, jerky, evanescent rise with results far less consistent than ether. Aromatic spirit of ammonia has a much milder action than ether, and lacks the advantage of an anesthetic; i. e., blocking psychic shock.

Probably the best judge of the value of the different methods of maintaining blood pressure is the professional hospital anesthetist, whose finger is even palpating the ebb and flow of the patient's vitality, and from whose records the accompanying charts were made. The anesthetist's opinion is that in her experience ten minutes of ether is the best prophylactic method she has seen employed to maintain blood pressure in spinal anesthesia.

3300 North Broad Street.

Prevention of Rheumatism.—In the prevention of acute rheumatism it is clear that the doctor in general practice must, as in all the great problems of preventive medicine, take a prominent and essential part, not only in early diagnosis and treatment, but in the supervision of those who have suffered from the results of the disease.—Poynton, F. J.: *Lancet* 2:1000 (Nov. 15) 1924.

LATE POST-TRAUMATIC COMPRESSION OF THE OS CALCIS

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In going through the literature on fractures of the os calcis, I find no reference to a traumatic entity which appeals to me to be of great importance; especially so in industrial cases and litigation in connection with them or malpractice suits. This I will term "post-traumatic calcaneitis."

During the last few years I have seen in consultation cases of trauma to the os calcis, caused by falls on the heel, in which the patient fell from 5 to 10 feet, in which the physical examination and roentgenogram showed no bony or other pathologic changes at the time of injury, but that subsequently developed a severe condition, which I will describe later.

As a coincidence I have had three cases of post-traumatic spondylitis, the condition which was described by Kümmell in 1895. He reported six cases of this condition, which is now known as Kümmell's disease.

It was the similarity in the structure of the vertebral body and the os calcis that led me to look for a similar pathologic condition in traumatized os calces. Kümmel's disease is a rather rare condition, and as the pathologic changes are analogous to those occurring in these os calcis cases, and further to facilitate description, I will bring out a few salient points in Kümmell's disease.

First, there is a history of a trauma to the vertebral body. The trauma may be of a compression type, but this is not always the case. The trauma does not necessarily cause a compression fracture.

This injury to the vertebral body produces a slowly developing atrophy of the spongiosa with compression of the vertebrae and resultant spinal deformity, this deformity occurring anywhere from weeks to months after the original injury.

In each of my three cases, one of which I inherited from another hospital in France, in which the patient was up and about with no spinal support because of early negative roentgen-ray findings, there was a history of trauma of a lesser or greater degree.

In the case of the soldier, the trauma was received through falling out of a bunk and hitting the back laterally against a table. This I should not consider a compression type of trauma. All three cases had been gone over thoroughly by competent clinicians and radiologists at the time of injury, with entirely negative findings.

This is exactly what occurs in certain cases in which the os calcis has been traumatized, and it is distinctly not a compression fracture. The vertebral body and the os calcis are histologically similar in construction. The cancellated portion, which has the major rôle of support and which is the portion affected, receives its blood supply from blood vessels passing through the compact bone into the cancellous bone. These blood vessels are comparatively long and so less protected than those supplying the compact bone, the latter receiving its major supply from numerous small periosteal vessels.

The reasons I feel that these cases are not compression fractures, but are caused by trauma to the blood vessels supplying the cancellous bone, are as follows:

1. The type of trauma is not always that of compression.

2. The roentgenogram and physical examination, at the time of injury, show no decrease in the depth of the bone or widening or other deformity, or, in fact, any discernible bony pathologic changes.

3. The roentgenographic findings in these vascular calcaneitis cases are not confined to the area that is anatomically subject to the stress of compression.

4. Ludloff of Dresden in 1920 demonstrated at post-mortem vertebral bodies which had received trauma during life, and which had subsequently developed kyphoses due to compression of the vertebrae. The histopathology was that of contusion and rupture of blood vessels of the lumbar segment, with resulting necroses of the cancellous portion and compression from superimposed weight. Also, Legg believes that, in some cases at least, Legg-Perthes' disease is caused by trauma.

The man with this type of traumatized os calcis, several weeks after a negative roentgenogram, continues to complain of pain in the heel. This pain is a deep-seated and generalized ache involving the entire heel. The heel is somewhat painful to pressure, and he walks on his toes. On examination, some slight broadening of the heel may be present, and the area posterior and inferior to the external malleolus shows infiltration, thickening and tenderness, caused by submalleolar broadening.

This condition is due to progressive broadening of the os calcis, with impingement of the bone on the internal aspect of the external malleolus, the perineal tuberosity being driven up and impinging on the inner articular portion of the fibula, thus pinching all the structures in that region. If this condition is allowed to progress, there is much pain in the submalleolar area and also in the subastragaloid joint, owing to superimposed weight.

Traumatic arthritis exists in both of these areas. In the latter, the normal contours of the os calcis are changed by flattening and broadening, so that movement of the subastragaloid joint causes impingement of the distorted articular surfaces, with resultant arthritis. Obviously, walking produces pain in these two joints. The movements of eversion and inversion are limited, but flexion and extension remain normal. The patient stands with the foot slightly pronated.

From ten days to one month after the injury, the previously normal roentgenographic findings may come back as a negative report. However, a close examination will show a loss of normal striation, the roentgenogram looking as though it were out of focus. There may be at the time, and there will be if the condition is allowed to progress, a diminution in the depth of the os calcis.

TREATMENT

The first treatment is prophylactic. All patients who have been subjected to severe trauma to the heel should be carefully watched and encouraged to use crutches. Roentgenograms should be made at the end of two weeks, as well as at the time of injury, and any deviation from normal, relative to striation or flattening of the bone, should be taken as positive evidence, and a cast applied immediately. Should the case be seen for the first time late, after the foregoing pathologic changes have developed, conservative treatment, such as immobility, arch plates, corrective shoes, braces or physiotherapy, may be tried. These, however, are notoriously unsuccessful in the late cases, and operative procedure is generally necessary.

Dr. Lowman of Los Angeles does what he terms an undermining osteotomy. He makes an incision external and posterior to the fibular malleoli and resects subperiosteally a wedge-shaped piece from the mass of bone impinging on the inner articular aspect of the fibula. A bit of the cortex, as well as the periosteum, is left and the whole is then bent inward, thus leaving no scar in the joint area. In case there is pain in the calcaneo-astragaloid joint on lateral movement, a complete arthrodesis is done in conjunction with the aforementioned procedure.

CONCLUSIONS

1. The condition is due to trauma of the blood vessels supplying the cancellous portion of the os calcis.
2. This is not a compression fracture.
3. Roentgenographic findings occur late.
4. Many of these cases go unrecognized until operative procedure becomes necessary.
5. This is an identical entity with Kümmell's posttraumatic spondylitis, and also is very probably analogous to Legg's or so-called Perthes' disease.

Granada Building.

END-RESULTS OF THE TREATMENT OF CERVICAL CARCINOMA WITH RADIUM AND ROENTGEN RAYS*

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From 1914 to 1923 inclusive, 450 patients with carcinoma of the uterine cervix entered my clinic; 345 of the patients had primary carcinoma, and 104 had a recurrence following a panhysterectomy. We decided to study the incidence of age, the number of pregnancies, the symptom that induced the patient to apply for medical aid, and the duration of the symptom from the time of its appearance until the patient sought medical assistance. All the patients were treated with combined radium and roentgen-ray therapy; statistics stating the number of patients that have passed the three and the five year periods free from recurrence and who are anatomically healed and subjectively well, in addition to other data, are included in the accompanying tabulations.

TABLE 1.—*Grouping of Four Hundred and Fifty Cases of Cervical Carcinomas According to Year and Physical Findings*

	A. Primary					B. Recurrent					
Year	Group 1	Group 2	Group 3	Group 4	Total	Group 1	Group 2	Group 3	Group 4	Total	Summary
1914	1	1	14	8	19	1	..	3	4	8	27
1915	..	4	10	5	19	..	3	6	2	10	29
1916	1	2	8	5	16	2	..	6	3	11	27
1917	..	4	10	4	18	1	1	3	2	7	25
1918	1	4	17	9	31	..	1	6	5	12	43
1919	2	3	12	14	31	..	..	10	4	14	45
1920	2	3	19	18	42	0	2	8	3	13	55
1921	4	5	13	21	43	..	1	2	5	8	51
1922	1	5	28	30	64	2	2	2	6	12	76
1923	3	14	22	14	42	2	2	2	3	9	72
Total	15	45	173	118	345	13	11	44	36	104	450

* Read before the meeting on radiology in the Section on Miscellaneous Topics at the Seventy-Fifth Annual Session of the American Medical Association, Chicago, June, 1924.

GROUPING OF CASES

Primary carcinomas of the uterine cervix are divided into four groups for the purpose of clinical study. The grouping is based solely on the findings by means of a general and bimanual physical examination and an endoscopic examination of the bladder and rectum. Group 1 comprises the cases in which the cancer is clearly localized in the cervix; Group 2 in which doubt exists as to localization. These cases usually show a doughy or edematous consistency of the paracervical connective tissue. In Group 3 are placed the cases in which there is an induration of the continguous tissues and organs; while Group 4 contains the cases in which there are large necrotic craters, frozen pelves, advanced cachexia due to autointoxication, distant metastases, and the like. We have adhered to this method of grouping, as clinical investigations are much facilitated thereby. In the writings of the various clinicians, groupings are used that depend chiefly on the personal interpretation and judgment of the gynecologist. The most common method is the division into operable, borderline and inoperable cases. An operable case, according to Baisch, is one in which even one of the parametria may be extensively involved. John G. Clark makes a simple and practical division of operable and inoperable groups. It is a fact that the majority of cases of clearly localized and suspiciously edematous involvement of the paracervical connective tissue, commonly called borderline cases, can be healed for years with radium applications, provided the radium is applied for a sufficiently long time so that the periphery of the growth is acted on with a dose assuring degeneration or destruction of the entire cancer growth. Group 1 cases of cervical carcinoma associated with other diseases prohibiting surgical treatment are subjected to irradiation. Therefore, a grouping as used by me is essential in the study of the therapeutic value of irradiations

To facilitate the study of the efficacy of radium and roentgen rays applied to recurrent carcinomas, we have grouped these cancers also into four groups. Group 1 contains the cases with the recurrence confined to the vaginal vault and stumps of the parametria; Group 2, those with a recurrence or continuation of the cancer in the posterior bladder or anterior rectal wall; Group 3, the cases with a recurrence or continuation in one or both parametria, and Group 4, those with a frozen pelvis, advanced cachexia, and the like. The groupings are given in Table 1.

TABLE 2.—*The Incidence of Age in Cancer of the Uterine Cervix*

Age	Number	Per Cent.
21 to 25	16	4.8
26 to 30	25	7.7
31 to 35	45	13.5
36 to 40	66	19.9
41 to 45	84	25.0
46 to 50	59	17.5
51 to 55	39	11.7
56 to 60	29	8.9
61 to 70	7	1.69
71 to 80	1	0.24
81+	1	0.24
46 to 55	170	41.5
41 to 60	280	67.0
36 to 60	321	77.0

INCIDENCE OF AGE AND PREGNANCY

The age incidence is presented in Table 2. The findings concur with those found in the literature on this disease. Between the ages from 46 to 55 years inclusive, 170 cases, or 41.5 per cent., occurred. During the

fifth and sixth decades, 284 cases, or 67 per cent., were found; and between the ages from 36 to 60 years, 331 cases, or 77 per cent.; 11.9 per cent. of the cancers occurred before the thirty-sixth year, and 10.8 per cent. after the sixtieth year.

TABLE 3.—*The Incidence of the Number of Pregnancies in Cancer of the Uterine Cervix*

	Pregnancies in Cancer of the Uterine Cervix		Pregnancies in 400 Women of Cancer Age	
	Number	Per Cent.	Number	Per Cent.
Nullipares	59	14.75	73	18.25
Primipares	73	18.5	58	14.5
Secundipares	52	13.25	69	18.0
Tertipares	51	12.75	72	18.0
Nullipares to tertipares, inclusive	241	60.25	281	68.25
Quadripares	36	9.0	42	10.5
Quintipares	24	6.5	28	7.0
Sextipares	25	6.25	16	4.0
Septipares	19	4.75	18	4.5
Octipares	10	2.5	14	3.5
Nonipares	11	2.75	7	1.75
Decipares	9	2.25	5	1.25
Undecipares	4	1.0	4	1.0
Duodecipares	2	0.5	2	0.5
Tertiodecipares	3	0.75	3	0.5
Quartodecipares	2	0.5	1	0.25
Quintodecipares	2	0.5	0	0.0
Total	400	100.0	400	100.0

The incidence of the number of pregnancies has been of especial interest. The generally accepted fact that women with many children have cervical carcinoma more frequently than women with few or no children is not borne out by our observations. Of a total of 400 consecutive cancer cases, 241 women, or 60.25 per cent., had three or fewer pregnancies or were childless.

This might be explained by the presumption that marriages with from none to three children predominate in our American families. To prove this, we tabulated 400 case histories of married women aged 41 years or older, that is, the cancer age, according to the number of children. We found that the percentages of the number of pregnancies are practically the same as those of cancerous patients. Sterility and marriages with one child are mainly due to infections. Marriages with two or three children result mostly from selective parenthood. Prevention of conception interferes with the natural function of the generative organs unless complete sexual abstinence is practiced. The selective limitation of offspring is probably the most frequent cause for the instrumental interruption of early pregnancy. Induced abortions, however, are the most frequent causes for injuries and infections. Sterility not artificially produced is also likely to be caused by chronic infections of the cervix or endometrium.

"Cancer of the uterus is very much less among Jews than among non-Jews. In the statistics from Budapest for several years, the ratio of deaths from uterine carcinoma to all carcinoma was about one third for Jews. When the greater length of life is considered, and the greater frequency of marriage and prolific child-bearing are realized, this very much smaller proportion of deaths from disease in this location is the more remarkable." [1]

This fact may be explained by the relative infrequency of infection. Hence the deduction is permissible that chronic infections resulting from trauma and bacterial invasion predispose to cancer, and that the number of pregnancies probably plays a secondary rôle as a predisposing factor.

1. Bulkley, L. D.: Cancer and Its Non-Surgical Treatment, New York, William Wood & Co., 1921, p. 25.

In 406 histories, the most prominent presenting symptom that induced the patient to seek medical aid was definitely stated. Hemorrhage was noted in 249 cases, or 61.5 per cent.; pain in eighty-two cases, or 20.1 per cent.; discharge in sixty, or 14.7 per cent.; loss of weight and strength in eight cases, or 2 per cent.; dysuria in three cases, or 0.8 per cent.; constipation in two, or 0.45 per cent., and complete prolapse of the uterus and vagina in two cases, or 0.45 per cent. It is interesting to note the duration of the presenting symptom from the time of onset until the patient sought medical advice, especially if we place the patients in the respective groups. This is shown in Table 4.

From this table, the conclusion may be drawn that the duration of bleeding of less than three months probably places the patient in the clearly localized Group 1 cases; if pain exists as the most prominent presenting symptom, the case may belong to any of the other three groups; while discharge, as the most prominent presenting symptom, has very little influence on the probable extent of the disease. We may reiterate that hemorrhage is the most alarming, discharge the first, and pain the most unfavorable symptom of carcinoma of the uterine cervix. The Group 4, or hopeless cases, always present all three symptoms.

RESULTS OF TREATMENT

From January, 1914, to Dec. 31, 1918, we treated 103 primary and forty-eight recurrent carcinomas of the uterine cervix with the combined method of radium and roentgen rays. The technic used has been described in various publications.[2] Table 5 represents the results obtained. Sixteen of 103 patients with primary carcinoma passed the five year limit well and free from recurrence. This gives an absolute cure of 14.5 per cent. Only two of forty-eight patients with recurrent carcinomas passed the five year period, an absolute cure of 4.5 per cent.

Bailey and Healy [3] treated eighty-eight cases of recurrent cervical carcinomas during the same period,

TABLE 4.—*Significance of the Most Prominent Presenting Symptom in Carcinoma of the Uterine Cervix*

A. FREQUENCY

	Number	Per Cent.		Number	Per Cent.
Hemorrhage	249	61.5	Pain	82	20.1
Discharge	60	14.7	Loss of weight and strength	8	2.0
Dysuria	3	0.8			
Constipation	2	0.45	Complete prolapse	2	0.45

B. INCIDENCE OF DURATION OF PRESENTING SYMPTOM

	Group 1			Group 2			Group 3			Group 4		
	Average, Months	High	Low	Average, Months	High	Low	Average, Months	High	Low	Average, Months	High	Low
Hemorrhage	3½	3	0	5½	24	0	5½	24	0	8½	36	3½
Discharge	2½	7	0	7½	24	0	11½	36	0	10	36	3½
Pain	0	0	0	4	6	0	3	12	0	6½	12	2½

with an absolute cure of 8 per cent., and John G. Clark [4] four cases, and one patient was well after five years, or 25 per cent.

2. Schmitz, Henry: The Technique and Statistics in the Treatment of Carcinoma of the Uterus and Contiguous Organs with the Combined Use of Radium and X-Rays, Am. J. Roentgenol. 9:622-670 (Oct.) 1922; A Study of the Action of Measured Radiation Doses on Carcinomata of the Uterine Cervix, ibid. 10:781 (Oct.) 1923.

3. Bailey, Harold; and Healy, W. P.: Follow-up Results of Nine Hundred and Eight Cases of Uterine Cancer Treated by Radium, Am. J. Obst. & Gynec. 6:402 (Oct.) 1923.

4. Clark, J. G., and Block, F. B.: Relative Values of Irradiation and Radical Hysterectomy for Cancer of the Cervix, Am. J. Obst. & Gynec. 7:543, 1924.

The three year results are shown in Tables 6 and 7. The percentages of cures for the three year period are 20.9 per cent. for the 175 primary cases, and 9.3 per cent. for the seventy-five recurrent cases.

Collective statistics for the surgical treatment of cervical carcinomas based on the same method of procedure as that employed in those for radiation treatment show permanent cures of about 25 per cent. It would therefore be of interest to compare my results with those obtained in other clinics. This comparison is made in Table 8.

The first three reports [5] comprise the results obtained with radium applications. They comprise 424 cases, with sixty-five five year cures, or 15.3 per cent. The last three [6] give the results obtained with combined radium and roentgen-ray treatment. They amount to 1,056 cases, with 146 five year cures, or 13.8 per cent. The similarity of the average results in the last three clinics is noteworthy. The total of all the clinics is 1,480, with 211 five year cures, or 14.2 per cent.

The operable cases in our clinic comprise Groups 1 and 2; that is, eighteen in 103 cases, or 17.5 per cent. five year cures 26.6 per cent. The operability at the Stoeckel clinic [8] in 350 cases of collum carcinomas was 70.6 per cent., the surgical five year cures were 35.4 per cent., and the absolute five year cures 26.6 per cent. Graves [9] had an operability of 64 per cent. in 181 cervical cancers. The surgical, that is, relative cures were 34.2 per cent., and the absolute cures 18.5 per cent. These results are shown in Table 9. The operability

TABLE 7.—*Three Year End-Results of Recurrent Carcinomas of the Uterine Cervix*

Year	Group 1 Number	Group 1 Living	Group 2 Number	Group 2 Living	Group 3 Number	Group 3 Living	Group 4 Number	Total Number	Total Living	Total Per Cent.
1914	1	..	..	3	..	4	8	..	....	
1915	..	..	2	6	..	2	10	..	....	
1916	2	2	..	6	..	3	11	2	....	
1917	1	..	1	3	1	2	7	1	....	
1918	..	..	1	6	1	5	12	1	....	
1919	..	..	..	10	1	4	14	1	....	
1920	5	2	2	3	..	3	13	2	....	
Summary	9	4	6	37	3	23	75	7	9.3	

TABLE 5.—*Five Year End-Results of Primary Carcinomas of the Uterine Cervix*

Year	Group 1 Number	Group 1 Living	Group 1 Per Cent.	Group 2 Number	Group 2 Living	Group 2 Per Cent.	Group 3 Number	Group 3 Living	Group 3 Per Cent.	Group 4 Number	Group 4 Living	Group 4 Per Cent.	Total Number	Total Living	Total Per Cent.
1914	1	1	....	1	..	....	14	0	....	3	..	....	19	1	5.3
1915	..	..	....	4	3	....	20	0	....	5	..	....	29	3	10.7
1916	1	1	....	2	..	....	8	2	....	5	..	....	16	3	18.7
1917	..	..	....	4	3	....	10	2	....	4	..	....	18	4	22.1
1918	1	1	....	4	1	....	18	2	....	8	..	....	31	4	12.9
Total	3	3	100.0	15	6	40.0	69	6	30.0	25	0	0.0	103	15	14.5
RECURRENT CARCINOMAS															
1914	1	..	....	..	..	....	2	..	....	6	..	....	8	..	....
1915	..	..	....	2	..	....	6	..	....	2	..	....	10	..	....
1916	2	..	....	..	..	....	6	..	....	3	..	....	11	..	....
1917	1	..	....	1	..	....	2	1	....	2	..	....	7	1	....
1918	..	..	....	1	..	....	6	1	....	5	..	....	19	1	....
Total	4	..	....	4	..	....	24	2	....	18	..	....	45	2	4.5

The relative curability is 50 per cent. The operability percentage would have been higher if all the cases of carcinoma of the uterus had been referred to our department. However, owing to the fact that the surgeons retain all the cases that they deem good operable risks, the operability percentage has remained low. The operability at the Johns Hopkins Hospital [7] has been 52.1 per cent., in 387 cases. The five year cures of the cases treated surgically was 46.5 per cent., the absolute percentage of Wertheim is 42.5 per cent., of Peterson 47.3 per cent., and of Cobb 57.1 per cent. The references on operability are given to support the contention that the operability in our series of cases is very small, as a result of the many advanced cases referred and the fact that the surgeons retain the clearly operable cases with good surgical risk. Another deduction must be made. High operability percentages indicate favorable material from a prognostic standpoint. The earlier the cancer case is submitted to treatment, the better will be the relative and absolute cures. Low operability means low absolute curability, as seen by the results of Clark, Bailey and Healy, Döderlein and Schmitz. The only exceptions are furnished by Kehrer and Baisch. Indeed, the low operability observed in the clinic of Clark has induced him to subject an ever increasing number of patients to radiation therapy. If we consider the results from these points of view, then we feel that our results in radiation therapy have been very encouraging.

TABLE 6.—*Three Year End-Results of Primary Carcinomas of the Uterine Cervix*

Year	Group 1 Number	Group 1 Living	Group 2 Number	Group 2 Living	Group 3 Number	Group 3 Living	Group 4 Number	Group 4 Living	Total Number	Total Living	Total Per Cent.
1914	1	1	1	0	14	0	3	0	19	1	5.3
1915	..	..	4	3	20	0	5	0	29	3	10.7
1916	1	1	2	..	8	2	5	0	16	3	18.7
1917	..	..	4	2	10	2	4	0	18	5	27.8
1918	1	1	4	2	17	4	9	0	31	7	22.6
1919	2	1	2	1	12	2	14	0	31	6	19.4
1920	2	1	3	1	19	3	18	2	42	7	16.7
Total	7	5	21	9	90	15	58	2	175	30	20.9
Inoperable	1	..	5	..	32	..	19	..	57	..	....
Died from toxemia	..	..	1	..	2	..	4	..	7	..	....

SUMMARY

Carcinomas of the uterine cervix must be grouped to facilitate the clinical study and the evaluation of radiation therapy.

The study of the incidence of the number of pregnancies justifies the conclusion that chronic infection

5. Bailey and Healy (Footnote 3). Clark and Black (Footnote 4). Kehrer, E.: Radiumbestrahlung, Arch. f. Gynäk. 117:261, 1923.

6. Döderlein, A.: Die Therapie der gynäkologischen Krebse mit radioaktiven Substanzen, Strahlentherapie 15:716, 1923. Schulte, Josef: Ergebnisse unserer Behandlung von 536 Genitalcarcinomen aus den Jahren 1914-1920, Arch. f. Gynäk. 120:446, 1924.

7. Marshall, K. H.: Carcinoma of the Cervix Uteri, Bull. Johns Hopkins Hosp. 34:141 (May), 184 (June) 1923.

8. Giesecke, A.: Die Dauerresultate nach Operation und Strahlenbehandlung des Uterus und Scheidenkarzinomes, Arch. f. Gynäk. 118:435 (Feb.) 1922.

9. Graves, W. P.: Operation or Radiation for Operable Cases of Cervical Cancer? Am. J. Obst. & Gynec. 1:122, 1920.

constitutes the most important predisposing cause in cancer of the cervix, and that pregnancy probably plays a secondary rôle as a predisposing factor.

The five year end-results have been presented and compared with those of other clinics. The low operability in this series of cases is compared with the high operability in other clinics. Viewed from this angle, we conclude that the end-results obtained in our series compare favorably with the radiologic and surgical statistics. The end-results give radiation therapy of cervical cancers a definite place in the treatment of this disease, especially in the borderline and clearly inoperable groups.

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ABSTRACT OF DISCUSSION

DR. JOHN F. MCCULLOUGH, Pittsburgh: It is apparent that, in carcinoma of the cervix, biopsy is a necessary and valuable procedure. In the discussion of the subject of carcinoma of the cervix by John G. Clark at a meeting of the Pennsylvania State Medical Society a year ago, it was apparent from his attitude at that time that he was more and more in favor of the use of radium in the treatment of recognizable early carcinoma of the cervix. With the experience of Schmitz and Clark and others, there is apparently little excuse to be offered for the substitution of surgery instead of irradiation in any case of recognizable carcinoma of the cervix. It has been my privilege as successor of the late Dr. Russell H. Boggs to follow up a large number of cases that were under his care, in addition to cases recorded in my own experience. Dr. Boggs was an ardent advocate of intense irradiation by means of radium within and around the cervix, together with the addition of heavily filtered, highly penetrating roentgen rays externally. I believe that Dr. Boggs' results compare favorably with the results presented by Dr. Schmitz. Dr. Schmitz is to be complimented for the sound attitude he has manifested in compiling these statistics. They will command widespread recognition and do a great deal toward establishing the true value of irradiation in carcinoma of the cervix.

of the cervix, a series of radium treatments is given, and after an interval sufficiently long for all of the effects of the treatment to occur, total abdominal hysterectomy is performed. In this group I have a small number of patients in whom carcinoma was proved microscopically, but after radium treatments no malignancy in the operative material removed could be demonstrated. This should reduce to a minimum the chance of local recurrence and the possibility of dissemination of the tumor material by the necessary surgical manipulation. When the malignancy has extended beyond the face of the cervix, involving the mucous membrane and vaginal wall with moderate fixation, radium alone is the treatment of choice; with massive involvements and fixation, much palliation can be accomplished with the judicious application of radium and roentgen rays. I wish to emphasize the essential features in the management of cases of carcinoma of the cervix: (1) Radium and roentgen rays are very efficient agents when judiciously applied, either alone, or, in a very small selected group, in combination with surgery, and (2) the first examining physician must realize his responsibility in immediately restoring these patients to health. All irregular menstrual phenomena and vaginal

TABLE 9.—*Percentages of Operability and Relative and Absolute Curability of Cervical Carcinomas for Different Methods of Treatment*

Clinic	Operability, Per Cent.	Total Number	Number Cured	Relative, per Cent.	Absolute Cures, per Cent.	Method of Treatment
Clark*	17.0	140	12	27.3	8.6	Radium
Bailey and Healy*	22.0	185	17	28.4	9.2	Radium
Kehrer	45.7	159	36	49.7	27.5	Radium
Döderlein	22.0	785	108	30.3	13.3	Radium + roentgen rays
Baisch	51.0	199	28	32.5	14.1	Radium + roentgen rays
Schmitz*	17.5	109	15	50.0	14.0	Radium + roentgen rays
Johns Hopkins	52.1	291	102	48.5	25.6	Surgery
Stoeckel	70.0	250	98	35.4	25.6	Surgery
Graves	44.0	121	34	34.2	15.5	Surgery

* Cases treated surgically are not included.

TABLE 8.—*Collective Statistics of Five Year Cures of Cervical Carcinomas Treated with Radium or Radium and Roentgen Rays*

Clinic	Years	Group 1 Number	Group 1 Living	Group 1 Per Cent.	Group 2 Number	Group 2 Living	Group 2 Per Cent.	Group 3 Number	Group 3 Living	Group 3 Per Cent.	Group 4 Number	Group 4 Living	Group 4 Per Cent.	Total Number	Total Living	Total Per Cent.	Method of Treatment
Clark	1914-1918	...	...	27.2	22	6	27.2	...	..	....	118	0	6.7	140	12	8.6	Radium
Bailey and Healy	1914-1917	11	3	27.2	22	6	28.1	...	..	....	121	8	6.6	155	17	9.2	Radium
Kehrer	1915-1917	19	11	58.0	40	13	30.0	....	..	....	70	12	17.0	129	36	27.5	Radium
Döderlein	1912-1918	110	40	45.6	136	21	22.0	340	23	6.7	169	1	0.65	785	108	13.3	Radium + roentgen rays
Baisch	1914-1917	61	18	29.0	29	6	15.4	29	4	4.4	7	0	0.0	199	28	14.1	Radium + roentgen rays
Schmitz	1916-1918	3	3	100.0	15	0	40.0	60	0	30.0	25	0	0.0	109	15	14.0	Radium + roentgen rays
Total	....	...	..	....	...	..	....	...	..	....	...	..	....	1,680	211	14.2	

DR. HARRY H. BOWING, Rochester, Minn.: I am sure that we all agree with what Dr. Schmitz has told us concerning carcinoma of the cervix uteri treated with radium and roentgen rays. This condition can undoubtedly be favorably influenced by such treatment. A rapid method of obtaining valuable data in these cases is the microscopic study of tissues to determine the grade of malignancy; there are certain factors, when found, which furnish a very valuable index as to the number of postoperative months of life the patient will have. In a study of carcinoma of the breast and rectum following radium and roentgen-ray treatments, it can be demonstrated that these factors can be enhanced or accelerated; in other words, the reaction in the tissues produced by irradiation simulates Nature's methods of combating the disease. The operability of cervical carcinoma does not depend on the skill of the surgeon, but rather on the extent of the disease; when it is limited to the cervical canal, it is the practice in the Mayo Clinic to perform total abdominal hysterectomy; when the process involves the face

discharge, regardless of its character and the age of the patient, demand a most careful examination in order to determine the cause. In the early cases we have a definite procedure to offer both patient and surgeon.

Strangulated Hernia in Infants.—The irreducible hernia as seen in the adult does not occur in young children, for as soon as the hernia becomes irreducible it also becomes obstructed, and gives rise to vomiting and, if unrelieved, to distention and constipation. At the same time, the great majority of such cases will reduce themselves if the infant is put to bed with the pelvis raised and a hot fomentation to the scrotum. The infant falls asleep, and almost invariably the hernia disappears. Failing this, very gentle taxis under light anesthesia may be tried, and generally is successful. Where real strangulation has occurred, this is evidenced by edema and discoloration of the scrotum, and operation should be performed without delay.—Herzfeld, G. M. A.: *Brit. M. J.* 2:669 (Oct. 11) 1924.

A STUDY OF THE 1923 EPIDEMIC OF ANTERIOR POLIOMYELITIS IN KANSAS

PRELIMINARY REPORT *

REX L. DIVELEY, M.D.

KANSAS CITY, MO.

During the summer and fall of 1923, there occurred throughout Kansas and its bordering states a rather severe epidemic of anterior poliomyelitis. I have followed as many cases of this epidemic as possible, studying them for a year, and feel that I now have statistics and conclusions that will bear reporting.

This epidemic centered around the Kansas state capital, Topeka, forty-nine of the 148 studied cases occurring in that city. The remaining cases radiated out from Topeka along the main highways.

I have been able to study and follow 148 cases, all occurring in Kansas or within a radius of a few miles of its borders. Oklahoma reported only a few cases of infantile paralysis; Missouri has four cases on record; Colorado reports none. The office of the secretary of the Nebraska board of health states that 117 cases have been reported during 1923 in that state, but no statistics or data were given. The greater number of this series of cases have been studied from personal reports made by the patient or parents, but many have been under my treatment and have been examined frequently.

Ninety-three of the 148 patients were men; fifty-five were women. The time of occurrence, by months, was: July, seven cases; August, seventy-eight; September, thirty-three; October, twenty-two; November, eight.

Fifty-five per cent. of the cases occurred during July and August, 77 per cent. during July, August and September.

Occurrence According to Age

1 year or under	11	10 years	9
2 years	18	11 years	2
3 years	22	12 years	4
4 years	7	13 years	6
5 years	11	14 years	3
6 years	9	15 years	2
7 years	3	From 15 to 25 years	22
8 years	8	From 25 to 40 years	9
9 years	6		

Deaths occurred in eighteen cases, or 8.7 per cent. Thirteen frank abortive cases, which were recognized by the parents, were reported.

The following symptoms were reported in the order of their frequency: High fever was noted in 90 per cent. of the cases, this occurring on the first day in 83 per cent. of the cases; gastro-intestinal upset in 64 per cent. of the cases, 75 per cent. on the first day; severe headache in 55 per cent. of the cases, 84 per cent. on the first day; pain and stiffness in the back of the neck in 54 per cent., this symptom generally occurring on the second to the third day; general muscular soreness in 48 per cent. of the cases, generally appearing on the third to the fifth day; sore throat in 20 per cent. of the cases, 77 per cent. of these cases appearing on the first day.

In the series, the acute illness, or the febrile stage, generally lasted from six to ten days. The shortest period reported was two days, the longest twenty-one days. In one case reported, there was no sign or symptom of a febrile stage, the paralysis developing without the usual prodromal signs. In one other case, the paralysis developed first, followed by fever, malaise and stiffness in the back of the neck. The paralysis was most frequently noted on the third to the fifth day.

Paralysis of the entire body was noted in 56 per cent. of the cases, generally starting in the lower extremity (63 per cent. of the cases).

The lower extremities only were affected in 27 per cent. of the cases: both legs, 13 per cent.; left leg, 6 per cent.; right leg, 8 per cent.

The upper extremities alone were affected in 6 per cent. of the cases: right arm, 4 per cent.; left arm, 2 per cent. The arm and leg on the same side were affected in 11 per cent.

One case showed paralysis of a spastic nature, which very soon subsided into the flaccid type. Four per cent. of the cases gave a history of incontinence of defecation and urination, but in all these cases, complete recovery was reported in a very few days. The paralyzed muscles started to recover from fourteen to twenty-one days after the acute symptoms abated, and in the vast majority of cases are still showing improvement at the end of the one year period.

After one year's observation, the treatment and results of recovery may be thus reported: good treatment, 26 per cent.; fair treatment, 48 per cent.; no treatment, 26 per cent.

Recovery was noted as follows: slight recovery, 10 per cent. of the cases; fair recovery, 37 per cent.; good recovery, 32 per cent.; complete recovery, 21 per cent.

SUMMARY

From the study of this series of cases, one is led to believe that there exist, during the epidemic, definite poliomyelitis carriers. In several communities I have records of persons who have visited various families in which poliomyelitis later developed, the visitor being the only possible person of contact.

It seems also possible that most persons in the community infested by poliomyelitis have the disease in a light abortive form, for in nearly all the records colds, snuffles or sore throat were reported in most of the other members of the immediate family of the patient.

It would also seem that the disease is selective to certain individuals, for all the family may be exposed to the patient and yet none show definite paralysis, yet one of this family may carry the disease to a neighboring family or locality.

CONCLUSIONS

From the study of this epidemic of anterior poliomyelitis, the cases over a period of one year having been followed, the following conclusions seem justifiable:

1. If an early diagnosis is made, and proper treatment instituted during the febrile stage, the resulting cord involvement is not only lessened, but in a great percentage of cases prevented.

2. If proper treatment is carried out during the second or convalescent stage, from 75 to 85 per cent. of the cases will show marked improvement or complete recovery, against 40 to 45 per cent. of partial recovery if proper treatment is not carried out.

3. If proper treatment is carried out during the first and second stages, fully 90 per cent. of the deformed limbs and backs can be prevented.

4. Many cases recover spontaneously without treatment, while others still show signs of paralysis after one year of careful supervision.

* Owing to lack of space, this article is abbreviated here. The complete article will appear in the author's reprints.

5. There are definite anterior poliomyelitis carriers.
6. The infection is selective and may run through neighborhoods or families, picking out various individuals.
7. Doubtless, most persons in a community during an epidemic have the disease in the light or abortive form, which gives immunity.

1807 Federal Reserve Bank Building.

DEAFNESS AND ITS ASSOCIATION WITH OSTEITIS DEFORMANS

REPORT OF CASE *

LEONARD W. JONES, M.D.
ROCHESTER, N. Y.

A Jewish spinster, aged 54, consulted me, Dec. 30, 1915, regarding her hearing, which had begun to fail two years before and which was now much deteriorated. This loss of hearing was accompanied by an annoying ringing in both ears, the right ear being worse than the left. There was no record of any impairment of hearing in any member of her family, and no history of any undue predisposition to colds. She had never had an earache, and gave no evidence of syphilis, tuberculosis or focal infection.

Hearing in the right ear was reduced to hearing a watch at 3 inches, which normally can be heard at 20 feet. A C fork, whose air conduction is to bone conduction as 65 to 25 seconds, was heard in her case at thirty seconds air and thirty seconds bone. The C-4 fork, whose air conduction is to bone conduction as 40 to 15, was reduced to ten and five seconds, respectively. The eardrum showed the lack of luster and slight retraction common to most eardrums in persons over 40. The left ear was practically the same as the right. Both eustachian tubes showed slight obstruction on inflation by the catheter, and the Weber test was equal.

For some two months this case was treated at regular intervals by inflation and pneumomassage, on the supposition that it was a case of middle ear catarrh; but, as the hearing showed no improvement, the patient was instructed to report at long intervals, more with the idea of overcoming her depression in feeling that nothing could be or was being done for her than with any hope of effecting a cure. There was considerable difficulty in passing the eustachian catheter on account of the juxtaposition of lower turbinate and septum, and this difficulty was increased by the patient's nervousness. Feb. 26, 1918, the watch was heard at 4 inches in the right ear and 2 inches in the left.

Two years went by without seeing this patient and then, Dec. 7, 1920, she returned, nervous and depressed as before, and with her hearing reduced to hearing the watch in contact with each ear. She had also undergone a striking change in appearance. Her figure had become more squatty. Her head seemed to have sunk down between her shoulders. The most marked changes were in the bony structure of her face. The nasal prominences of the superior maxillary on both sides had become markedly enlarged, making the nose unusually prominent even for her race, on account of its breadth.

The tuning forks now tested out as follows:

C	Right ear	AC	0	BC	15
C-4	Right ear	AC	5	BC	25
C	Left ear	AC	0	BC	0
C-4	Left ear	AC	6	BC	0

The Galton whistle was heard at 3.0 and 5.0 in the right and left ears, respectively. With the broad nasal passages it was now possible to pass a No. 3 catheter with ease where formerly a No. 2 had caused considerable pain.

Having in mind the possibility of some ductless gland disturbance, I referred the patient to an internist, who was unable to contribute anything to the diagnosis, and then to a roentgenologist, who reported that the change in the facial bones was due to Paget's disease, not the better known disease of the nipple but the rarer bony change known also as osteitis deformans. The deposits of denser bone showed up plainly in the negative as white blotches, and were scattered through the long bones as well as the bones of the skull.

Looking back over her history, its outcome and the tuning fork tests, I came to the conclusion that I had been treating a case of otosclerosis instead of a middle ear catarrh.

Otosclerosis, according to Kerrison, consists essentially in the absorption of old bone in the region involved and its replacement by new spongy bone. It may retain its spongy character or in time be converted into dense bone. Osteitis deformans, according to Osler, is a rarefying osteitis which gradually involves the center of the bones with the formation of Howship's lacunae, haversian spaces and perforating canals. There is also new bone formation, both subperiosteal and myelogenous; the latter process gradually gains and so the bones thicken. In short, it would seem that otosclerosis was a localized bone disease of which osteitis deformans was a more generalized form.

These questions naturally suggested themselves:

1. Why does not every case of osteitis deformans show deafness with otosclerotic characteristics?

2. Why do not the ordinary textbooks on otology and the practice of medicine mention a relationship between otosclerosis and osteitis deformans?

In the first place, osteitis deformans is not a common disease. According to Osler, the disease was first described by Sir James Paget in 1877. In 20,000 medical cases at Johns Hopkins Hospital, only two generalized cases were known. A bulletin published by the Clifton Springs Sanitarium reports four cases of Paget's disease, two of which were confined to the long bones and two involving the cranial bones, and in neither of these last two is there mentioned any loss of hearing accompanying the condition. This bulletin further gives the incidence as one in 2,640, which is a marked difference from the figures of the Massachusetts General Hospital, with one case in 40,714 admissions, so that the chances for observing and studying cases of deafness associated with osteitis deformans are few.

In endeavoring to get some information on the incidence and association of otosclerosis, I was referred to Dr. Albert Gray [1] of Glasgow, whose letter, together with an article by Jenkins [2] on "Osteitis Deformans and Otosclerosis," gave me the information I desired.

Dr. Gray writes:

> One must be careful about the deductions one draws in respect to any causal relationship between otosclerosis and osteitis deformans. There are three different types of bony change in otosclerosis. Now the bony change in osteitis deformans resembles only one of these types; viz., the most common one. The other two types described in my book show no similarity with osteitis deformans. I myself have never had the opportunity of examining a case of osteitis deformans pathologically, and so have not discussed this problem in my book. So far as I know, Jenkins' paper on this subject is the only one which does so on the grounds of real pathological fact and not on mere speculation.

Dr. Jenkins' article, to which Dr. Gray referred, made the following distinctions between the bone changes of otosclerosis and osteitis deformans that would tend to throw out my belief that the former was a localized and the latter a generalized condition of the same pathologic process:

1. Osteoporosis, or that condition in which the earthy constituents of the bone are absorbed so that it becomes

* Read before the Rochester Eye, Ear, Nose and Throat Club, April, 1924.

1. Gray, Albert: Personal communication to the author.
2. Jenkins, G. J.: J. Laryngol. & Otol. 38:344 (July) 1923.

soft and porous, is a condition that is marked in both diseases. In otosclerosis it is sharply limited to the footplate of the stapes, the bony walls of the cochlea, and in some cases the nerve structure of that organ, while it invariably leaves the other portion of the labyrinth untouched. In osteitis deformans, its limitation can be detected only by a careful search. The dense bony capsule of the labyrinth appears to afford the most resistance to the progress of osteitis deformans.

2. The trabeculae of bone in osteitis deformans are somewhat coarser and the bone lamellae more distinct than in otosclerosis.

3. The proliferation of fibroblasts is more evident in otosclerosis, but the fibrous tissue is more prominent in osteitis deformans.

4. In three cases sectioned and examined after decalcification, the stapes was not affected in osteitis deformans.

Jenkins asks whether the two diseases can be identical, and answers:

1. There is no hereditary tendency in osteitis deformans as there is in otosclerosis.

2. There are the points of difference already pointed out in the bone changes.

3. Otosclerosis usually begins early in life, and osteitis deformans is recognized, as a rule, late in life.

4. Osteitis deformans is general, otosclerosis local.

5. There is no family history of otosclerosis in osteitis deformans.

6. In osteitis deformans, the deafness takes on more of the internal ear type for the reason that the labyrinth is involved at some distance from the foramen ovale, and also because the overgrowth of bone at the internal auditory meatus may exert a pressure on the auditory nerve.

If the two diseases are identical or due to the same fundamental cause, then the difference in distribution must depend on the individual.

Considering the case here reported in the light of Jenkins' conclusions, we find that there was no hereditary tendency; the bony changes cannot be studied; deafness began late in life, and as the disease progressed, it took on more of the characteristics of nerve deafness, especially in the left ear.

CONCLUSIONS

1. In general hospitals to which cases of osteitis deformans are admitted and where their symptoms of deafness and tinnitus are likely to be overlooked, the examining physician should bear these symptoms in mind and have the patient studied by an otologist.

2. Jenkins has added one more cause of deafness to those now listed in our textbooks, viz., deafness of the otosclerotic type following osteitis deformans.

53 South Fitzhugh Street.

Coordination of Activities in Medical Teaching.—Medicine is a great tree of many branches, which takes its roots in the basic sciences and spreads into innumerable arms of specialization. To keep it green and growing, the sap must be kept running from the roots to the leaves, and this can be accomplished only by the constant coordination of activities that in method, material and the very nature of the talents demanded would seem utterly unrelated. It has been the effort of the modern medical school to strengthen and maintain these coordinations which have caused it to be so often misunderstood and criticized by many of the practicing profession and the laity.—Zinsser, Hans: *Boston M. & S. J.* **191**:1058 (Dec. 4) 1924.

ROENTGENOTHERAPY IN SARCOMA OF THE ORBIT *

G. E. PFAHLER, M.D.
PHILADELPHIA

This study is based on a series of twenty-six cases, which came under my observation during the last twenty years, from 1903 to 1923. There are very few cases of sarcoma of the orbit reported in literature as having been treated by the roentgen rays.

In a review of the subject of ocular sarcoma by Neame,[1] which is accompanied by a rather full bibliography, no mention is made of the roentgen rays in the treatment of retrobulbar sarcoma.

Hartshorne[2] reports a case of lymphosarcoma of the choroid, in a child, aged 6 months, operated on after two years with exenteration of the orbit. One exposure to radium was made immediately afterward. A recurrence developed in two months. The opposite eye became involved, and the child died at 3 years of age.

Werner[3] makes the statement that in retrobulbar tumors, especially glioma and gliosarcoma, radium acts better than the roentgen rays. He reports no details of cases treated, but I cannot agree with his general statement as to the superiority of radium over roentgen rays. In the primary sarcomas of the orbit that I have treated with success, by means of the roentgen rays, I have been able to preserve the eyebrows and the eyelashes by great care in arranging my portals of entry. One cannot direct radium rays so sharply, and radium rays cannot be used so skilfully for cross-firing purposes. The roentgen rays can be directed almost like a bullet from a gun. I have in my possession a half gram of radium element, but I do not use it in these cases excepting to place it in the orbit after evisceration.

Haret, Truchot and Cassau[4] report the case of a retrobulbar tumor successfully treated by irradiation. There was no recurrence at the end of a year. There had been no operation.

Jendralski,[5] in referring to the results obtained at the Breslau clinic, records seven cases of sarcoma of the orbit and lids treated by means of radium, mesothorium and the roentgen rays. Only two cases were treated by the roentgen rays alone. Here, too, the results were not very good. One patient died, four were discharged with a bad prognosis, and in two the results were doubtful.

Chevallereau and Offret[6] report the healing of a lymphoma of the orbit under the influence of the roentgen rays.

Mayweg[7] reports the healing of a recurrent, melanotic sarcoma of the orbit in eight weeks.

Jendralski, in the Breslau clinic, treated seven cases of glioma. Two children had remained well five and three years, respectively, with no interference with general development and no effects on the brain.

REPORT OF CASES

The cases are recorded in the order in which they were referred to me for treatment during twenty years.

* Read before the Section on Ophthalmology at the Seventy-Fifth Annual Session of the American Medical Association, Chicago, June, 1924.

1. Neame, H.: Brit. J. Ophth. **6**:293 (Nov.) 1922.
2. Hartshorne: Am. J. Ophth. **6**:604 (Aug.) 1922.
3. Werner: Strahlentherap. **15**:732 (Nov. 6) 1923.
4. Haret, Truchot and Cassau: Bull. et mém. Soc. radiol. méd. de France **9**:89 (April) 1921.
5. Jendralski: Klin. Monatsbl. f. Augenh. **68, 66**, 1920, 1921.
6. Chevallereau and Offret: Tr. Ophth. Gesellsch. Heidelberg, 1911, p. 113.
7. Mayweg, in Rieder-Rosenthal: Röntgenkunde, Leipzig, Johann Ambrosius, Barth. **2**:352.

I report them, of necessity, very briefly, omitting the history, the details on which the diagnosis was based, and the studies that were necessary in making a differential diagnosis. Wassermann tests, temperature records, blood counts and roentgen-ray examinations of the accessory sinuses were made in nearly all cases. Biopsies were made in only some of the recurrent cases. I believe that a diagnosis can be made in practically all cases, and that operations should be avoided in this class of cases when possible.

Case 1.[8]—Miss D. B., aged 16, referred by Dr. L. Webster Fox, March 3, 1903, had also been examined by Dr. Walter Freeman. Dr. L. W. Rodman removed a section, which was reported as sarcoma. The antrum of Highmore had been previously curetted by Dr. E. B. Gleason. The growth again rapidly infiltrated the accessory sinuses (Fig. 1). The patient was weak, anemic and only able to sit up. The retrobulbar sarcoma involved the entire orbit and encased the eyeball. The mass protruded about an inch. Forty-one treatments were given in three months, when all evidence of the tumor had disappeared, and the patient seemed to be well. The eye showed no ill effects, either from the tumor or from the rays. The eyeball was in its normal position. The patient returned to work for one year. In October, 1904, or about fifteen months after she seemed to be well, she developed ethmoid disease. Dr. Freeman removed a spur from the nose, which he thought was not connected with the sarcoma. Two weeks after this operation she returned with pain in the region of the eye and later in the head. She became maniacal and died within three months after the operation in spite of active roentgen-ray treatment, probably from metastasis to the brain. No necropsy was permitted.

Case 2.—Mrs. L. I. W., aged 44, was referred, May 18, 1906, by Dr. L. Webster Fox, with a diagnosis of sarcoma of the anterior chamber. The tumor had slowly developed during five years. She received sixty-seven treatments within a period of seven months. Each treatment consisted of 10 minutes at 10 inches, with 1 ma. and penetrative value of 6 Benoist (6 inch spark gap) and filtered through sole leather. The growth was reduced to about half its original size, and has remained stationary to the present time, or eighteen years.

Case 3.—A. E. H., aged 4, referred March 19, 1907, by Dr. L. Webster Fox, for recurrent sarcoma of the right lower eyelid, had been operated on by Dr. Fox three weeks previously, and a microscopic examination showed the tumor to be sarcoma. This case was reported by Dr. Henry S. Wieder[9] before the Philadelphia Pathological Society Oct. 24, 1907, as the second earliest case of sarcoma of the lower eyelid. The tumor had recurred to its original size in these three weeks. The patient was given thirty-nine roentgen-ray treatments between March 19 and July 31, 1907, at which time all evidence of tumor tissue had disappeared. These rays were filtered through a layer of sole leather, and consisted of about 1 ma. of current, at a distance of about 12 inches, and with a penetration of 6 Benoist. The patient has remained well since, or at least was still well, Nov. 21, 1917, ten and one-half years, since which time the address has been lost.

Case 4.—S., aged 2, was referred, June 2, 1909, by Dr. G. W. Wende of Buffalo for treatment of a recurrent, round cell sarcoma, developing four months after evisceration of the orbit. The recurrent tumor filled the entire orbit and bulged outward about three fourths of an inch. The patient was given twenty-three treatments within a period of six weeks, when the tumor tissue was reduced about one-half its original size. The patient was returned to Dr. Wende, who continued the treatment, with improvement progressing for a time, but later a recurrence developed, which ended fatally in November, 1909.

Case 5.—B. G., aged 10 weeks, was referred, Oct. 23, 1913, by Dr. Norman Smith for recurrent sarcoma of the orbit and upper jaw. Dr. Asnis had reported on the primary growth as a perithelial sarcoma, developing from the adventitia of the blood vessels. Under roentgen-ray treatment, the local tumor had practically disappeared, but the patient died about March 1, 1914, with metastatic tumors in the abdomen.

Case 6.—Mrs. C. M., aged 42, was referred to me, Nov. 5, 1914, by Drs. L. Webster Fox and J. F. Hill, for treatment of recurrent retrobulbar sarcoma, which caused a marked protrusion of the eyeball, much pain and general weakness. She had had a retrobulbar operation a year previously (the microscopic diagnosis was sarcoma). The eye had never receded into the orbital cavity, and then later the tumor tissue increased. Three courses of treatment were given during a period of four months. Each course consisted of about fifteen doses, cross-firing on the orbit. The general health of the patient improved, and the tumor tissue decreased. After the last treatment, Feb. 22, 1915, the eyelids became swollen and red, but this was again followed by improvement, until June, 1915, when signs of recurrence developed and Dr. Hill advised operation. The patient has remained well to date.

Case 7.—J. W., a boy, aged 9, was referred by Dr. L. Webster Fox, Feb. 11, 1915, with a retrobulbar sarcoma which, with the eye, made a mass approximately the size of a hen's egg. The patient was treated during a period of five months. At the end of this time there was some improvement. Two months later he became worse, and was admitted to Wills' Eye Hospital, September 2, with the diagnosis of sarcoma of the orbit of the right eye. The globe was enucleated. The patient was discharged September 14, and readmitted November 2, for recurrence of sarcoma. The bone was cleaned, and the patient was discharged December 21. He was readmitted May 3, 1916, for recurrent sarcoma, and excision and curettement were performed. The patient died next day.

Case 8.—J. A. B., a man, aged 31, referred, Aug. 2, 1916, by Drs. George E. de Schweinitz and Godfrey M. Crowell, had been examined also by Dr. Samuel Risley. Dr. de Schweinitz reported to Dr. Crowell, July 21, that the patient had a tumor of the choroid in the lower portion of the right eye, which had all the ophthalmoscopic appearance of a leukosarcoma, and that Dr. Risley reported that he could see no other explanation for the appearance in the lower quadrant of the right eye, than that of new growth. Operation was advised, but was refused by the patient. The patient was given four courses of treatment, each four weeks apart, each course consisting of treatment through four portals of entry, crossfiring on the posterior portion of the orbit. The patient thought he had improved in his vision and in comfort. He still had defective vision in the affected eye, but in all other respects was well, Feb. 26, 1924, or seven and one-half years after he was referred for treatment.

Case 9.—W. B., a man, aged 35, was referred, Dec. 18, 1916, by Dr. W. B. West, for the treatment of a sarcoma of the orbit, which was a recurrence and extension from a sarcoma of the antrum. The tumor also involved and had destroyed the left side of the frontal bone, and had extended into the ethmoid cells. A course of treatment was given through eight portals of entry, with no improvement. The patient died, Jan. 16, 1917.

Case 10.—C. T., a girl, aged 4, referred, June 18, 1917, by Drs. Maxwell Langdon and Ross H. Skillern, had had no previous operation. The left eye had been gradually crowded from the orbit during a period of three months (Fig. 2). Dr. Skillern found no evidence of accessory sinus disease, and my roentgen-ray examination of the accessory sinuses showed no evidence of disease in the sinuses. We made a clinical diagnosis of retrobulbar sarcoma. Four courses of roentgen-ray treatment were given with the technic described later, during a period of five months, when the patient seemed to be well. She has remained well since, now seven years. She has developed normally, and has progressed normally with her studies. When examined by Dr. Langdon and myself, Sept. 10, 1923, she seemed to be perfectly well except for a cataract in the left eye. Dr. Langdon reported, "It is certainly a most interesting result and really an astounding one. It is especially useful to know that, in spite of the irradiation, the cerebral functions have been normally performed. The right eye is normal in all respects, with normal vision. The left eye has nothing but light perception, the subnormal vision

8. Previously reported by Pfahler, G. E.: Carcinoma and Tuberculosis Treated by the Roentgen Rays, J. A. M. A. 41:1407 (Dec. 5) 1903.
9. Wieder, H. S.: New York M. J., Oct. 24, 1907; Nov. 23, 1907.

being the result of the cataract. The light field is full, and I therefore think it is fair to presume that the posterior portion of the eye is normal. Tension of the eye is also normal, and, except for a ptosis of the lid, the eye is in good condition. I advise a discission of the lens at the first opportunity. Of course, whether the cataract is the result of the irradiation or of the ocular condition will never be known." The mother wrote, Feb. 25, 1924, that the child was well and would be brought for the cataract operation in the near future.

CASE 11.—M. G., aged 41, a fireman, was referred March 23, 1918, by Drs. Maxwell Langdon and Samuel Risley, who had found considerable detachment of the retina by a very opaque growth which they regarded as a melanotic sarcoma. He was given three courses of treatment within four months. July 17, the patient thought that he had improved. He has been lost track of since that date.

CASE 12.—R. W. E., a girl, aged 4, was referred, Oct. 2, 1918, by Drs. L. Webster Fox and A. J. Mander because of retrobulbar sarcoma. There was only moderate protrusion of the eye (Fig. 3). The patient was given five courses of treatment in five months, with complete recovery at the end of this time. The patient was reported well, Feb. 25, 1924, or five and one-half years after beginning treatment.

CASE 13.—A. M., a girl, aged 2½ years, was referred, March 1, 1920, by Dr. L. Webster Fox, for treatment of retrobulbar sarcoma of the right side; which had been developing for two months. She was given three courses of treatment within a period of three months, when the tumor tissues had disappeared. She seemed entirely well, November 24. She was still well when seen, March 3, 1924.

CASE 14.—G. L., a boy, aged 5, was referred, May 3, 1920, for treatment of a recurrent glioma, by Dr. L. Webster Fox, who had removed the left eye for glioma in January, 1920. The tumor had been growing for two years. Under treatment the local disease had disappeared, Aug. 4, 1920. Three months later the disease recurred locally, and a metastatic tumor developed in front of the left ear. Once more the local and metastatic disease were made to disappear, Jan. 28, 1921. A recurrence developed again in June, 1921, and while there was some improvement by roentgen-ray and radium treatment, the disease could not be controlled. The patient died with symptoms of cerebral involvement, Nov. 29, 1921, or about a year and a half after coming for recurrence.

CASE 15.—Mrs. E. D., aged 55, was referred by Dr. L. Webster Fox, June 23, 1920, for treatment of the third recurrence of a melanotic sarcoma involving the conjunctiva of the right lower eyelid. A small, pealike body had been removed by Dr. O'Malley five years before, and a recurrence had been removed by Dr. Risley three years before. The pigmented tumor involved the inner surface of the right lower eyelid and measured 3 by 2 by 1 cm. She also had metastatic masses in the right side of the neck, equaling, in all, about the size of a hen's egg. November 16, or after five months' treatment with radium and roentgen rays, the tumor in the eye had been reduced about 90 per cent. and the metastatic mass about 50 per cent. The growth was retarded for about a year, and then redeveloped, resulting in death about eighteen months after beginning treatment.

CASE 16.—Miss G. P., aged 14, was referred by Drs. Ivan Faucett and H. P. Gillespie, Oct. 9, 1920, for the treatment of a recurrent retrobulbar sarcoma of the right orbit. The tumor was first noticed in September, 1919. In August, 1920, a section was removed, and in October, 1920, as much of the tumor was removed as seemed practical to save the eye. Dr. Faucett said: "We did a Kroenlein resection of the orbital wall, Sept. 20, 1920, removing a growth from the external wall of the orbit. It apparently arose from the orbital periosteum and lay outside the muscle zone, but extended back to the optic foramen, preventing complete surgical removal; so we left the globe in place." It was reported by Dr. Clovis to be of the epulis type. At the time of beginning treatment there seemed to be considerable tumor tissue in the orbit, with protrusion of the eye, and beginning rupture and opacity of the cornea. The patient received seven courses of treatment in about two years, when she seemed to be free from any tumor tissue. April 7, 1923, the patient seemed to be well, but had a useless eye, which was showing further signs of degeneration. It was removed by Dr. L. Webster Fox, and 25 mg. of radium was placed in the orbit for eighteen and one-half hours. At the operation, a bony mass was formed in the posterior portion of the orbit, also shown by roentgen-ray examination. This was evidently a healing by recalcification of this tumor. She has remained well since, three and one-half years after beginning treatment of an incomplete removal of an osteosarcoma of relatively benign character.

CASE 17.—E. G., a boy, aged 5, was referred by Drs. L. Webster Fox and O. F. Mershon, Oct. 18, 1920, with the diagnosis of retrobulbar sarcoma, which had been developing for nine months. At this date, the eye was projected from the orbit, and, together with the tumor mass, was equal in size to that of a hen's egg. The patient was treated for four months, with no appreciable improvement. The eye and the tumor were then removed. During the entire treatment and at the time of the operation, the clinical diagnosis was sarcoma. A 50 milligram capsule of radium was placed in the orbit for twenty-three hours, immediately after the operation. A section examined microscopically was reported as inflammatory tissue. In spite of this report, we believe it was sarcoma. The tumor had been developing progressively for thirteen months, and there was no clinical evidence of sinus disease, as determined by Dr. Ross H. Skillern, and no roentgen-ray evidence. The patient had no other symptoms of inflammatory disease. He was still well when seen, March 6, 1922. The mother wrote that he died with convulsions, Oct. 8, 1922. The cause is unknown.

CASE 18.—F. F., a man, aged 53, was referred by Dr. L. Webster Fox, April 22, 1921, for treatment of retrobulbar sarcoma of the left orbit, of seven weeks' duration. The tumor was developing chiefly under the upper eyelid and crowded the eye downward and forward, giving especially bulging of the upper lid. The eyesight did not seem to be affected. The patient was given two series of roentgen-ray treatments as described. May 23, or two months after beginning treatment, the tumor tissue had practically disappeared; the eye had receded into the socket, but there was still some ptosis of the upper lid. June 21, the patient died, the cause not being recorded. He was a dispensary patient from outside the city.

CASE 19.—R. T. W., a girl, aged 6 weeks, referred, Nov. 6, 1915, by Dr. L. Webster Fox for treatment of a retrobulbar sarcoma of the right orbit, was given only one course of roentgen-ray treatment, with complete disappearance of the tumor. She is now 9 years of age and has developed normally. She is in the third grade of school. The eye, however, is abnormally small, not more than half the size of the left eye.

CASE 20.—Mrs. L. S., aged 34, was referred by Dr. L. Webster Fox, Feb. 11, 1922, for treatment of a retrobulbar sarcoma of the right orbit. The eye projected beyond the level of the orbit and, together with the tumor mass, was equal to the mass of a hen's egg. Dr. Fox had made three punctures, but obtained no pus. Dr. George Coates had punctured the antrum, but obtained no pus. Roentgen-ray examination of the sinuses showed no evidence of disease. The patient had no fever and no leukocytosis. There had been some swelling and prominence of the eye for four months, but the tumor tissue had developed very rapidly within a week (Fig. 4). The patient was given seven series of treatment within a period of three months, when the tumor tissue had nearly disappeared. Without any further treatment, all evidence of tumor tissue had disappeared, and the eye seemed well. We do not know what her vision was at the beginning, but now she can only recognize light and gross objects with her right eye. She is still well, over two years after beginning treatment. Her eye and her life have been saved, and this was accomplished without destroying the eyebrow and only some of the eyelashes.

CASE 21.—J. W., aged 2, was referred by Drs. L. Webster Fox and J. L. Zimmermann, Nov. 27, 1922, for treatment of sarcoma of the right orbit, which began sixteen days before, with extension of the tumor in the zygomatic and temporal region as far as the ear. The patient had four courses of treatment in four months. The evidence of tumor about the eye disappeared, and the metastatic tumor in the zygomatic area was reduced, but he developed an extension toward the top of

the head, with probable cerebral involvement, and died in about seven months after beginning treatment.

CASE 22.—Miss A. A., aged 56, was referred for treatment of sarcoma of the orbit by Dr. Elwood Kirby, March 3, 1923. Protrusion of the right eye had been developing for two years, but especially during six weeks, accompanied by aching and a sensation of pressure. Roentgen-ray examination of the accessory sinuses showed no disease. The shadow of a soft tissue tumor was demonstrable in the upper portion of the right orbit. There was a resistance back of the eyeball, and at the upper inner portion of the right orbit a palpable mass of tumor tissue. The patient was given three courses of the treatment described later within three months. At the end of this time all evidence of tumor tissue had disappeared. There was left a slight puffiness of the lower eyelid.

CASE 23.—Mrs. J. H. D., aged 30, was referred by Dr. McCluney Radcliff, March 5, 1923, for treatment of sarcoma of the left orbit. She had noticed swelling back of the upper eyelid two and one-half years, gradually getting worse. The eyeball was being pushed downward and forward. In certain directions she had double vision. Dr. Gordon Saxon reported the Wassermann test negative. Dr. Brinkerhoff reported no evidence of leukocytosis. Roentgen-ray examination showed some exudate in the ethmoid cells, and a tumor shadow above the eyeball on the left side. The patient could not rotate the eye upward at all. She received three courses of roentgen-ray treatment in three months, with complete disappearance of the tumor tissue. Her eye was well, March 6, 1924.

CASE 24.—Mrs. J. S. N., aged 49, was referred for examination and treatment, April 19, 1923, by Drs. William Zentmayer and P. S. Schwenk, on account of sarcoma of the orbit of fifteen months' duration. She had been treated for a time by osteopathic rubbing and electrical treatment. There was a tumor growing back of the left upper lid, which crowded the eye downward and forward. Roentgen-ray examination showed complete destruction by malignant disease of the upper brim of the orbit, and extending upward into the frontal bone about 2 inches and extending backward into the temporal region about 2 inches, with extension into the ethmoid region. The patient has had six series of roentgen-ray treatments, chiefly with the high voltage rays. The high voltage rays were used because the low voltage rays used in the first course produced no effect. During this year the tumor tissue has been reduced about 50 per cent. and there has been some recalcification of the diseased bone. Swelling has persisted chiefly above the inner canthus, where we are thinking of introducing some radium needles.

CASE 25.—F. B., a man, aged 42, was referred by Dr. John Brophy, Oct. 23, 1923, for roentgen-ray examination and treatment of sarcoma of the right orbit. Swelling and protrusion of the right eye had been developing during two years. Vision had failed for several months. Roentgen-ray examination showed malignant destruction of the bone, involving the outer two thirds of the upper portion of the orbital brim, with extension up into the frontal bone over an area about 1 inch in diameter. The patient has been given three courses of treatment to date, with undoubted decrease in the tumor tissue, and some evidence of recalcification of the diseased area of the bone. The time is too short to have recalcification complete. This will require probably a year, or more.

CASE 26.—Mrs. E. J., aged 71, was referred, Oct. 31, 1923, by Dr. L. Webster Fox, for treatment of sarcoma of the right orbit. The eye had been swelling and protruding gradually during three months. Sight had been failing, and when the patient was referred she could only count fingers when close to the eye. The eyeball was protruded half way from the socket, with marked swelling of the eyelids and complete closure of the lids. Roentgen-ray examination showed malignant destruction of the brim (and probably the roof of the orbit), with extension upward at least 3 cm. and backward to within 2.5 cm. of the vertical line drawn through the external auditory meatus. Dr. Fox found evidence of optic neuritis. She has been given to date four courses of roentgen-ray treatment. The tumor tissue about the orbit, Dec. 10, 1923, had practically disappeared, with recession of the eyeball to practically normal position, leaving only some swelling of the lower eyelid. The diseased area in the bone shows some evidence of recalcification. It takes at least a year for a bone tumor area to recalcify.

COMMENT

I have treated nine cases of recurrent sarcoma of the orbit. Six of the patients have died. All but one showed a definite improvement, lasting from two to fifteen months. One patient with osteosarcoma is apparently free from disease at the end of three and one-half years. One patient with sarcoma of the eyelid was well nine years, and is probably still well. One patient with melanotic sarcoma of the conjunctiva improved for a year, but died of metastasis.

Summary of Results

Case	Condition	Date	Duration of Improvement	End-Result
	RECURRENT CASES OF SARCOMA			
1	Round cell sarcoma of orbit and antrum	12/ 5/03	15 months	Died, Jan., 1905
3	Sarcoma of lower lid	2/20/07	10 years	Still well, 1917
4	Round cell sarcoma after evisceration of orbit	6/ 2/09	4 months	Died, Nov., 1909
5	Sarcoma of orbit and upper jaw	10/22/13	2 months	Died, March 1, 1914
6	Retrobulbar sarcoma	11/ 5/14	7 months	Operation; well, March 1, 1924
9	Orbital cavity and frontal bone extended from antrum of Highmore	12/16/16	No improvement	Died, 1/16/17
14	Glioma of orbit and brain	5/ 2/20	1 year	Died, 11/29/21
15	Third recurrence, melanotic sarcoma lower eyelid and conjunctiva	6/23/20	1 year	Died, Dec., 1921
16	Retrobulbar osteosarcoma	10/ 9/20	3¼ years	Well, March, 1924
	PRIMARY CASES OF SARCOMA OF EYEBALL AND LID			
2	Anterior chamber....	5/18/03	18 years	Reduced ¼ in size
8	Leukosarcoma of the choroid	8/ 2/10	8 years	Arrested
11	Melanotic sarcoma...	8/22/13	3 months	No record
	PRIMARY SARCOMA OF ORBIT			
7	Retrobulbar	2/11/15	None	Op., 9/21/15; died, 5/4/16
10	Retrobulbar	6/15/17	7 years	Well, 2/25/24
12	Retrobulbar	10/ 2/18	5 years	Well, 2/24/24
13	Retrobulbar	8/ 1/20	4 years	Well, 2/3/24
17	Retrobulbar (very advanced)	10/18/20	None	Op., 2/18/21; died of convulsions, 10/8/22
18	Retrobulbar	4/22/21	2 months	Died, 6/21/21; cause unknown
19	Retrobulbar	11/ 6/15	9 years	Microphthalmia
20	Retrobulbar (advanced)	2/11/22	2 years	Well, 2/1/24
21	Retrobulbar and metastasis	11/27/22	4 months	Died, June, 1923
22	Retrobulbar	2/ 2/23	1 year	Well, 2/1/24
23	Retrobulbar	2/ 2/23	1 year	Well, 2/1/24
24	Retrobulbar with extension to bone	4/19/23	1 year	Still under treatment
25	Retrobulbar with extension to bone	10/23/23	7 months	Still under treatment
26	Retrobulbar with extension to bone	10/31/23	7 months	Still under treatment

The poor results in the recurrent cases, as compared with the good results in the primary cases, would argue against operation and in favor of early and thorough, but skilful, irradiation of the primary tumor. This is what one would expect when it is realized that cutting into sarcoma favors implantation and dissemination. Most of these patients died of cerebral involvement. If, for any reason, a patient is operated on, there should be prompt postoperative roentgen-ray treatment, or probably, better, implantation of a radium capsule in the orbit following evisceration.

The Schmieden surgical clinic in Frankfort-on-the-Main has for several years given up all operations on sarcoma, and all sarcomas are treated by irradiation.

I have treated three primary cases of intra-ocular sarcoma in which the disease has been arrested from three months to eighteen years.

I have treated fourteen cases of primary retrobulbar sarcoma, with failure in two cases and with freedom from symptoms in nine cases at the end of from one to nine years, with three additional cases, presenting

Fig. 1 (Case 1).—*A*, wound of exploratory excision and protruding eyeball; *B*, after four weeks of daily treatments with fractional doses, showing some dermatitis and eyebrow preserved; *C*, after thirty-four fractional treatments: eyebrow preserved; eyelashes gone; *D*, after forty treatments within three months: practically well.

extension of the disease to the frontal bone, which are improving under treatment at the present time. It is remarkable that in the last three cases that have been referred to me there was rather extensive bone involvement, indicating a very advanced stage of the disease. It indicates the advisability of a careful roentgen-ray examination of the orbital bones in all cases of sarcoma of the orbit.

Clinically, under treatment, the patients usually show improvement within a month after the first course of treatment. There is usually reduction in the size of the tumor, and some recession of the eyeball into the orbit, and the patients suffer less pain. The earlier the patient is treated, the more prompt and more satisfactory have been results. In all of the early cases, the tumor tissue disappeared completely. There will, of course, always be doubts in some one's mind as to the diagnosis in those cases in which the patient has recovered, and there is no just criticism of such an attitude from a scientific standpoint; but from the practical and human standpoint, I think that the patient runs less risk by irradiation of the primary tumor, rather than to have a section made for diagnosis or to have an operation done to confirm the clinical diagnosis.

GENERAL EFFECTS ON THE NORMAL TISSUES

In all of these primary cases I have obtained no ill effect on the lids, conjunctiva or cornea, and all have been able to preserve the eyelashes and eyebrows. The preservation of the eyelids and eyebrows requires the greatest care in outlining the fields and directing the rays during crossfiring.

In Case 19, the child was treated when 6 weeks of age. The development of the eye was probably arrested by the irradiation. One patient developed a cataract, which may possibly have been due to irradiation. The other primary cases show some defect in vision, but we have no records of the vision at the beginning of treatment. Generally, this could not be taken. The outward appearance of the eyes is normal.

Müller [10] records the sensibility of the tissues of the eye on the basis of 100 per cent. as the skin unit dose; conjunctiva and sclera, 100 per cent.; cornea, from 120 to 130 per cent.; lens, from 90 to 100 per cent.

Stumpf [11] gives: skin of eyelids, 100 per cent.; connective tissue, from 120 to 150 per cent.; cilia, about 75 per cent.; cartilage, from 120 to 150 per cent.; and all other parts of the eye, more than 100 per cent. Therefore, if one keeps the dosage at 100 per cent., and if the crossfiring values in the depth are carefully planned and measured, no serious harm should result.

TECHNIC

The technic during these twenty years has passed through evolutionary changes. The first case was treated by means of small fractional doses, with unfiltered rays, carried just to the point of producing an erythema. In spite of this, all visible and palpable disease disappeared for about a year. I believe that, if it had been treated primarily with the roentgen rays, it would have been a permanent success. It was a recurrent case, and the patient died with metastasis to the brain.

No matter what technic is used, the roentgenologist must determine or be told of the extent of the disease. He must then deliver about 100 per cent. of an erythema dose into all the tumor tissue, and must not damage the

Fig. 2 (Case 10).—*A*, *B*, *C*, retrobulbar sarcoma developing during two years before treatment; *D*, patient well, Oct. 13, 1917; the patient has had no treatment since, and has remained well; eyebrows and eyelashes preserved; cataract has developed.

normal tissues. This requires a knowledge of irradiation values and of the principles governing distribution.

In general, during the last ten years, we have made use of a 9 inch parallel spark value, 5 ma. of current, and twenty minutes' exposure, with rays filtered through

10. Müller, Christoph: München. med. Wchnschr., 1921, No. 7.
11. Stumpf: Arch. f. Augenh., 1921.

a combination filter which was equivalent to 6 mm. of aluminum, and with a focal skin distance of 30 cm. From four to six portals of entry were used: (1) a field between the eyebrow and the eyelashes of the upper lids; (2) one above the eyebrow; (3) one below the eyelashes; (4) one or two fields in the temporal and zygomatic region, and (5) an oblique field through the intra-ocular region of the opposite side.

The fields must not overlap. The eyebrows and eyelashes must be carefully protected by lead.

More recently, we have had some patients who did not respond to this technic and yet, when the high voltage rays were used, the disease has seemed to respond.

It must be realized that skill will count for as much in this field as in any operative procedure. The possession of a roentgen-ray outfit is no more of a guarantee of skill or fitness for irradiation treatment than is the possession of a set of surgical instruments a guarantee of fitness for a surgical operation.

CONCLUSIONS

1. Irradiation has shown improvement, but has been an ultimate failure in nearly all recurrent cases of sarcoma of the orbit.

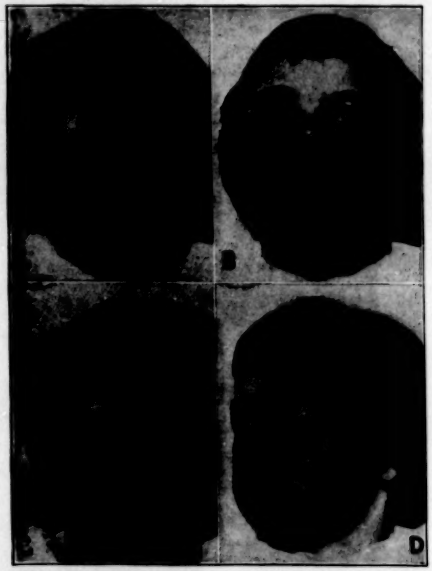

Fig. 3 (Case 12).—*A*, protrusion of eyeball, Oct. 2, 1918; *B*, disappearance of tumor, with normal appearance of both eyes, March 13, 1919; eyelashes and eyebrows preserved; *C*, protrusion of eyeball at beginning of treatment; *D*, complete recovery.

2. Roentgenotherapy has been successful in the majority of primary sarcomas of the orbit.

3. Roentgenotherapy should be the method of choice in all primary sarcomas of the orbit.

4. When used early, roentgenotherapy has shown prompt results, and has done no harm to normal tissues.

5. A biopsy for diagnostic purposes does not seem justified.

6. Skill and general medical knowledge is of as much importance in radiotherapy as in surgery.

1321 Spruce Street.

ABSTRACT OF DISCUSSION

Dr. S. Lewis Ziegler, Philadelphia: I cannot discuss the details of the cases presented by Dr. Pfahler, but I certainly do commend the fine results which he has obtained, and which

Fig. 4 (Case 20).—*A*, *B*, marked projection of eyeball, with no vision, at beginning of treatment; *C*, Oct. 30, 1922: complete disappearance of tumor tissue, with preservation of the eyebrows and most of the eyelashes; vision defective in right eye; no damage to skin.

he always does obtain through his experienced and careful work. The point I wish particularly to call attention to is the occurrence of cataract in Case 10. At a former meeting of this section in Atlantic City, I uttered a warning in regard to the use of the roentgen ray for the treatment of incipient cataract, and cited a case in which the cornea had been badly injured by the use of the roentgen ray, the result being a chronic ulcer which finally required enucleation of the eye. In addition to the case that Dr. Pfahler has cited, I want to mention a case of cataract in the right eye following irradiation of a supra-orbital sarcoma, and, later, a cataract with glaucoma in the left eye. This was relieved by posterior sclerotomy and a complete discussion of the lens. I also wish to call attention to some other cases that have recently appeared in the literature. Weill, in the discussion of roentgen-ray therapy before the French Ophthalmological Society in 1919, cited three cases of lens opacity following irradiation for Mikulicz's disease, vernal catarrh and lupus. Doret, before the same society, in 1923, reported a case in which irradiation of both eyes for vernal conjunctivitis, under proper precautions, was followed two years later by double cataract, which recovered under operation. It is evident, therefore, that our best efforts should be directed toward determining the technic of such a valuable agent as the roentgen ray in the treatment of orbital growths, so that, if possible, we may avoid any injury to the lens, cornea or the ocular tissues. There is no question of the wonderful value of this treatment. The greatest need is to study the possibilities and determine a protective technic.

Dr. William Zentmayer, Philadelphia: It may interest you to know the progress of my case, which Dr. Pfahler cited, especially as it illustrates the difficulty of making a clinical diagnosis. This patient was treated by Dr. Pfahler for about one year, and as there had been no improvement in the condition, other than recalcification of the bone in some areas, and the patient was suffering more and more from pain, it was deemed advisable to operate. At the suggestion of Dr. Pfahler, the periosteum was not removed. We removed the soft tissue, and found the roof of the orbit almost completely destroyed; but, much to our surprise, there was no malignant tissue in the soft parts of the orbit. The condition had evidently been entirely in the bone, and possibly also in the anterior part of the brain. The brain covered by the dura was prolapsed into the orbit, and had produced very marked proptosis. The patient is still under observation, and one can now see the pulsations of the brain in the orbit. The bones of the

temple and frontal region are also involved in this case. As to whether all of Dr. Pfahler's cases are sarcoma of the orbit, there must, of course, be some doubt. The diagnosis rests entirely on the ophthalmologist, but we are all familiar with the difficulty in making a clinical diagnosis of sarcoma of the orbit. I should like, however, to emphasize the fact that if we are to get results in these cases we must keep hands off surgically at first. The man to treat such patients is the roentgenologist or the radiologist, before we disseminate the disease into other tissues and structures. Dr. Pfahler's statistics show this very positively.

DR. MAXWELL H. LANGDON, Philadelphia: Dr. Pfahler had one of my patients, a child, aged 4, when first seen, who had a protrusion of one eye, of about 8 mm., with rotation of the globe decidedly diminished. The child seemed healthy in every way. There was no history of syphilis, and the Wassermann reaction was negative. If it was not syphilis, we thought that it must be neoplasm, and, in all probability, malignant. There was no treatment other than irradiation, except exenteration of the orbit. We tried irradiation, with very satisfactory results. I saw the child last fall, practically six years after the time I first saw her, and the eyeball to all appearances was perfectly normal, with the exception of cataractous lens. It was perfectly in place with full rotation, normal tension, normal reaction of the pupil to light, a full light field, and, as near as we could tell, normal macular perception. So, apparently, all we have left is to remove the cataract. They have agreed to bring the girl in and have that done. I think you will agree that it is much better to have an eye that has function and no organic disease, even with a cataractous lens, than to have nothing in the orbit. This child was in her normal grade at school, and stands well in her classes.

DR. W. H. ROBERTS, Pasadena, Calif.: In cases of apparent tumor of the orbit with exophthalmos or protosis, particularly in young children, there is one thing that one should keep in mind before instituting treatment with the roentgen ray or radium, and that is the fact that this may be due to chloroma, which will not be helped in the least by irradiation. We can determine this diagnosis very early by examination of the blood, so that in all young people with proptosis one should, in justice to himself and the patient, insist on an early blood examination for the purpose of eliminating the possibility of chloroma.

DR. G. E. PFAHLER, Philadelphia: I do not know whether the rays are responsible for this cataract or not, or how many cataracts will return as the result of irradiation. Dr. Ziegler has added a few more cases to the records. There is undoubtedly a possibility of doing damage to the eye. We must at no time distribute to the eyeball or eye tissues any more radiation than we would apply to the skin. The experimental work, however, that has been done and the investigations that have been made indicate that the tissues of the eyeball are as resistant to radiation as are the tissues of the skin or other normal tissues roundabout. It is my aim in treating these cases in which the tumor is in the posterior portion of the orbit to direct the rays so far as possible into the posterior portion of the orbit, and not through the eyeball. This can be done by going down through the frontal region between the eyebrow and eyelashes, then through the antrum below, and both above and below the zygon labyrinth. In this way, one cross-fires from several angles into the posterior portion of the orbit. This irradiation must be done thoroughly; and in a young child the difficulties can be appreciated but it can be done.

Environment and Rheumatism.—The influence of environment on the incidence of acute rheumatism is one of the problems in prevention which appears to me particularly to need more extensive investigation. Damp and cold houses and districts tend to make acute rheumatism drift into a chronic course, and it is my belief that a child returning from hospital after an attack to such surroundings is certainly in great danger of chronic invalidism and likely to die in a few years. I am also most suspicious of cold winds when there has been a spell of hot weather and much dust in the towns, this combination producing tonsillitis and increasing the incidence of acute rheumatism.—Poynton, F. J.: *Lancet* 2:1001 (Nov. 15) 1924.

RECTAL PATHOLOGY IN THE NEGRO

INCIDENCE AND PECULIARITIES *

CURTICE ROSSER, M.D.
DALLAS, TEXAS

The physician of the South inherits the health problem of the Southern negro as he does his religion and his Democratic affiliation. The obligation to concern himself constantly with the question of disease in the more or less indolent, often dependent race, which makes up one tenth of our population and crowds our dispensaries, is mandatory—humanity impels and the safety of the adjacent Caucasian race demands.

This obligation is becoming nation wide in its extent, as well as more definitely an urban problem. The fourteenth census [1] shows that 17.4 per cent. of our 10,500,000 negroes are found in the Northern states, as against 11.6 per cent. ten years previously, while in the South, the race continues to concentrate in the cities.[2]

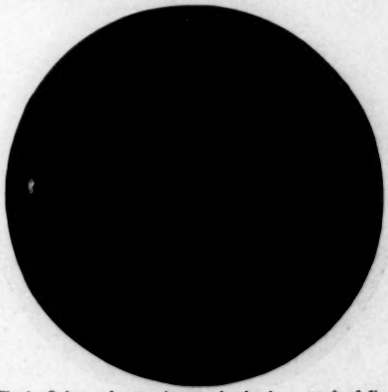

Fig. 1.—Stricture of rectum in negro female; dense strands of fibrous tissue approximating the appearance of hemorrhoids in the same race, in Figure 2.

This discussion must be predicated on two admissions —the heritability of diatheses and the possibility of the presence of distinct characteristics in the dark skinned races. While the inheritance of disease, as such, is discredited, biologists [3] agree that a predisposition to certain diseases is heritable, a fact which Karl Pearson [4] has proved by statistics. Anthropologists suggest that "in the slow and gradual development of the human race from a lower mammalian class, numerous separations and divisions have occurred, some offshoots being stranded in a primitive stage—the negro division of the human family possessing distinctive anatomical characteristics bearing the unmistakable imprint of this origin —approaching the anthropoid apes in the essential

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* From the Department of Surgery and Proctology, Baylor University College of Medicine.

* Read before the Section on Gastro-Enterology and Proctology at the Seventy-Fifth Annual Session of the American Medical Association, Chicago, June, 1924.

1. Fourteenth Census Reports, 2, Chapter 1, U. S. Dept. of Commerce, Washington, D. C.
2. Statistical Bull. 4, No. 9, Metropolitan Life Insurance Company, New York, 1923.
3. Popenoe, P., and Johnson, R. H.: Applied Eugenics, New York, the Macmillan Company, 1922.
4. Pearson, Karl: Tuberculosis, Heredity and Environment, London, 1912.

characteristics in which he differs anatomically from the rest of mankind.[5] In the words of Pearson, "The indication is that of a long differentiated evolution, in which the negro lies nearer to the common stem than the European, he is nearer to the childhood of man."[6]

Balloch[7] and Matas,[8] in the nineties, noted the presence of certain fibrous tissue processes peculiar to dark skinned races, notably keloid, uterine fibroid and elephantiasis. Matas' study of the comparative racial statistics of the New Orleans Charity Hospital remains a classic contribution.

Day,[9] in 1921, investigated the urologic idiosyncrasies of the negro, and was impressed with the presence of the same fibrous tissue reaction in lesions of this locality, finding the most common venereal complication of the blacks to be stricture of the urethra, its sequelae, and adenitis.

In 1923, in a preliminary contribution,[10] I called attention to the fibrous nature of certain common rectal lesions in the negro, and suggested the general term

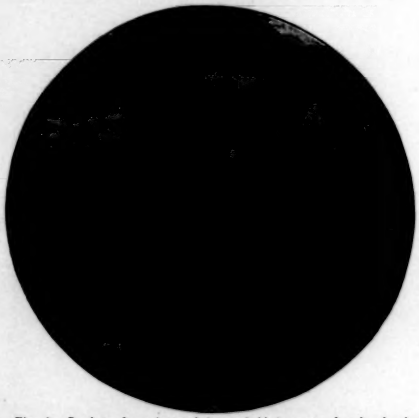

Fig. 2.—Sections from internal hemorrhoid in negro female showing fibrosis.

fibroplastic diathesis as being broad enough to comprehend all the described manifestations, to call attention to the element of racial heredity, and to describe a process characterized by mesoblastic hyperplasia, without direct involvement of surrounding tissues, in response to injury.

To determine the relative incidence of the more common anorectal complaints in the negro as compared with the white, and emphasize the fibroplastic diatheses as a factor in negro proctology, all the rectal cases occurring in Baylor Hospital, over a five year period ending Dec. 31, 1923, have been analyzed.

The hospital population for the term given was 42,002, of which one tenth (estimated from bed capacity) were negroes. The total number of rectal cases admitted was 1,138, of which 1,034 were white cases and 104 negroes. Multiplying the latter figure by 10 (which will be done hereafter to determine the actual relative incidence) demonstrates that rectal disease, in general, occurred in almost exactly the same ratio in the two races.

Pruritus ani was the least often observed; five cases are recorded, all in the white race. Bordier,[11] years ago, called attention to the diminished peripheral sensibility of the negro, and the lessened sensibility of the general nervous system to pain and shock, which he believed to be associated with a histologic difference in the development and shape of the tactile papillae of the skin. This fact is in harmony with the inferior organism of the race; it is not peculiar to the negro, but common to all "stoic" savage races. Certainly, it explains the rarity of pruritus, and the clinical observation that, when present, it is borne with equanimity.

Spastic sphincter ani was also unobserved in the black, although fourteen cases were recorded. No doubt the same considerations obtain here as in pruritus.

Fissure was observed in ninety-four cases, of which six were in negroes and eighty-eight in white persons. The "relative" number in the negro was 60; i. e., 6 times 10. It will be seen that anal fissure was in our series two thirds as prevalent in the negro.

Prolapse was observed in eleven cases, of which one was in a negro and ten were in white persons. The relative number in the negro was 10. In other words, prolapse apparently occurred in the same ratio in the two races.

Rectal carcinoma was observed in thirty-seven cases, of which one was in a negro and thirty-six were in white persons. The relative number in the negro was 10.

Rectal cancer is apparently three and one half times as frequent in the white race, an observation which has been noted before this. Royster,[12] in a review of all cases in which operation was performed at St. Agnes (a hospital for colored patients) over a period of fifteen years, records no cases of rectal cancer, and recently stated[13] that he recalls only one case in his experience. Cancer is a disease of civilization, and the negro will no doubt in time show the same incidence as the white race. In 1920, the negro death rate from general cancer had risen from 5.8 in 100,000 in 1880, to 50.4 in 100,000,[14] the increase partly to be explained by the fact that more negroes now live to enter the cancer age.[15]

INFLAMMATORY CONDITIONS

It was thought advisable to group together a number of conditions based on pyogenic infections of the anorectal tract, and it was found that the incidence of the entire group was definitely greater in the negro.

Inflammation of the rectum (unspecified) was seen in ten instances, with two negro and eight white cases recorded. The relative incidence would be twenty to eight in favor of the black.

Rectal ulcer was observed in sixteen cases, of which four were in negroes and twelve in white persons. The relative number of negro cases was 40. Relatively, then, ulcer of the rectum is over three times as common in negroes.

5. Wortman, J. L.: The Negro's Anthropological Position, Analostan Magazine 1: 48, 1891.
6. Pearson, Karl: Social Problems, London, 1912, quoted by Papence and Johnson (Footnote 3).
7. Balloch, E. A.: Relative Frequency of Fibroid Processes in the Dark Skinned Races, News 44: 29, 1895.
8. Matas, Rudolph: Surgical Peculiarities of the Negro, Am. Surg. 24: 483, 1896.
9. Day, C. H.: Urological Idiosyncrasies of the Negro, Urol. 5: 19 (Jan.) 1921.
10. Rosser, Curtice: Proctologic Peculiarities of the Negro: The Fibroplastic Diathesis, Am. J. Surg. 37: 265 (Nov.) 1923.
11. Bordier, A.: Pathologie comparée de l'homme et des êtres organisés, Paris, 1887, quoted by Matas (Footnote 8).
12. Royster, H. A.: Operations at St. Agnes Hospital, Nat. M. 6: 221, 1914.
13. Royster, H. A.: Personal communication to the author.
14. Census Reports, Bull. 152, Census Bureau, Washington, D. C., 1922, footnote.
15. The Life Expectancy of the Negro Wage Earner at Age 10 in 1911 was 41.32; in 1912 it was 47.08 (Footnote 2).

Abscess (perirectal, ischiorectal, rectal) was observed in seventy-four cases, of which seventeen were in negroes and fifty-seven in white persons. The relative number of negro cases was 170. Almost the same ratio holds good for abscess as for ulcer.

Anorectal fistula was observed in 150 cases, of which twenty were in negroes and 130 in white persons. The relative number of negro cases was 200.

TABLE 1.—*Diagnosis as to Type*

Negro cases:		White cases:	
Internal	5	Internal	85
External	11	External	37
Combined	9	Combined	124
Unqualified	9	Unqualified	391
Total	34	Total	657

It would appear that in this series, while the primary pyogenic processes are three times as common in the negro as in the white, fistula, usually a sequel of a pyogenic process, is less common, there being a ratio of 64 per cent. negroes to 36 per cent. whites. We have believed that it is the inherent reparative power which prevents in many instances the formation of fistulas following abscess.

STRICTURE OF THE RECTUM

Stricture of the rectum was observed in thirty-six cases, of which nineteen were in negroes and seventeen in white persons. The relative number of negro cases was 190.

In this series, stricture (Fig 1) was relatively eleven times as common in the negro. I [16] have previously called attention to the unusual prevalence of this type of fibrosis among negroes. If traumatic strictures (chiefly the result of hemorrhoidectomies), spasmodic constrictions and congenital remnants are excluded, we see a large group due to some type of chronic inflammation, chiefly venereal, in this series consisting almost entirely of negroes. In a group of twenty cases that I have previously reported, it was noted that strictures in the race are accompanied by all manner of fibrous tissue overgrowths illustrating the fibroplastic diathesis; hypertrophic anal margins, skin tags, condylomas and, in two

TABLE 2.—*Relative Presence of Fibrous Tissue and Vascularity in the Two Races*

Negro Cases	White Cases
Nos.	Nos.
3. Little clot; much fibrosis	1. Clot; no fibrosis
6. Fibrosis; inflammatory	2. No clot; much fibrosis
7. Much fibrosis; little clot	4. Little clot; much fibrosis
9. Much fibrosis	5. Much clot; no fibrosis
11. Much clot; much fibrosis; inflammatory	8. Much fibrosis; many small clots
13. Fibrotic	10. Much clot; undergoing organization
15. Fibrotic; inflammatory	12. Much fibrosis; few small clots
16. Much clot; undergoing fibrous organization	14. Fibrotic

cases, definite anovulvar elephantiasis. Moreover, it is a well established fact that the simple dilation of these lesions, or divulsion, leads to an increase in the fibrosis —a finding also noted by Day in connection with urethral strictures in the colored race. My own experience had led me to favor complete posterior proctotomies, with after-treatment for twelve months, in these cases.

16. Rosser, Curtice: Stricture of the Rectum, Texas State J. Med. 19:508 (Jan.) 1924.

GRANULOMA INGUINALE (ANAL TYPE)

While I can report only one case of granuloma inguinale, the fact that observers elsewhere have found the condition to be initiated in some instances, primarily in the anal region, rather than in the groin or labia, leads me to include the lesion as possibly of more frequent occurrence than our diagnoses would indicate. An increasing number of cases of granuloma inguinale are being reported in this country, most of them in negroes, and the statement has been made [17] that when other races become infected in a country where most of the sufferers are negroes, the lesion is atypical, tends to remain localized, and is resistant to antimony and potassium tartrate (tartar emetic).

The characteristic microscopic picture, showing hypertrophic epithelial papillae with underlying sclerotic connective tissue and numerous fibroblasts, and the dense, keloid-like cicatrix that follows the lesion, would seem to incriminate the racial diathesis in the reaction

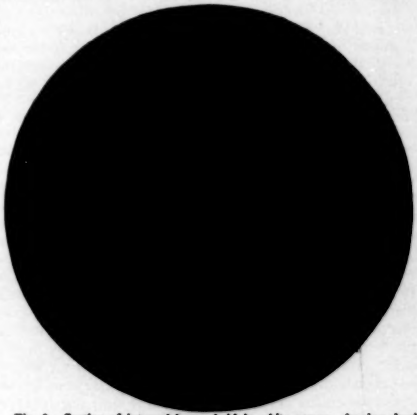

Fig. 3.—Section of internal hemorrhoid in white person, showing dominant vascularity.

to the infection. Lynch [18] notes the fact that even with extensive perianal involvement, no extension to the mucous membranes of the anus occurs, which was noted in my own case.

The diagnosis of granuloma inguinale must be considered in all chronic ulcerative lesions of the perineum and perianal regions.

Hemorrhoids were observed in 691 cases, of which thirty-four were in negroes and 657 in white persons. The relative number of negro cases was 340.

In this series, hemorrhoids occurred (considering the relative hospital population of the two races) slightly less than twice as often in the white race.

The diagnosis as to type is recorded in Table 1.

My personal experience has been that external hemorrhoids appear much more commonly in the negro than definite internal hemorrhoids. Moreover, it has been my observation that, in the great majority of cases, hemorrhoids in the negro are accompanied or preceded

17. Symmers, Douglas; and Frost, A. D.: Granuloma Inguinale in the United States, J. A. M. A. 74:1304 (May 8) 1920. Randall, A.; Small, J. C., and Belk, W. P.: Granuloma Inguinale, Surg., Gynec. & Obst. 34:717 (June) 1922.

18. Lynch, K. M.: Tartar Emetic in the Treatment of Granuloma Inguinale, South. J. 15:688 (Sept.) 1922, and personal communication to the author.

by inflammatory processes, and that on clinical examination, the hemorrhoid is not the soft, vascular lesion characteristically seen in the white race, but more a fibrous, somewhat indurated, process.

To check this observation, sixteen sections from unselected cases, representing an equal number of negroes (Fig. 2) and Caucasians (Fig. 3), were submitted to a pathologist (Dr. J. H. Black) without any identification of the sections as to race, and the request was made that they be examined as to the relative presence of fibrous tissue and vascularity in each slide. His report is given in Table 2.

In other words, 87.5 per cent. of the negro cases demonstrated marked fibrosis, and 25 per cent. vascularity; while 37.5 per cent. of the white cases were definitely fibrotic, 37.5 per cent. definitely vascular, and 25 per cent. somewhat vascular.

Previous observers, including Matas [8] and Rodman,[19] have commented on the comparative rarity of hemorrhoids in the negro, and believed it to be an immunity common to primitive races. The latter notes that Indians also were formerly known to be comparatively immune, as are the lower mammals. Both the observers mentioned also believed varicose veins to be less common in the negro, and Day [9] found varicocele to be unusual in the race.

COMMENT

The series of cases analyzed would indicate that rectal disease in general is equally prevalent in the two races; that cancer, pruritus, fissure and spastic sphincter are less common in the negro, and prolapsus equally common. The inflammatory conditions of the region are definitely more often seen in the negro, as is fistula. Benign fibrous stricture occurs eleven times as often in the negro, being accompanied often by other manifestations of the fibroplastic diathesis. Hemorrhoids in this series occurred twice as often in the Caucasian race there being apparently an excess of fibrous tissue in the hemorrhoid in the colored cases. Granuloma inguinale, pathologically a connective tissue lesion, occurs sufficiently often around the anus to be considered in the diagnosis of any chronic ulcerative lesion of this locality in the negro.

From the data at hand, it would seem permissible to infer that the inherent tendency of the dark skinned races to form fibrous tissue in excess—the fibroplastic diathesis—is in evidence in rectal pathology of the race as elsewhere.

In connection with the question of the possible etiology of the interesting race tendency under discussion, the work of Carrel and his associates [20] is interesting and suggestive. A strain of fibroblasts was isolated from an embryonic heart and cultivated in embryonic tissue juice which was discovered to have the property of increasing the growth velocity of fibroblasts and stimulating unlimited proliferative capacity. Extracts of adult organs, like embryonic tissue juice, at first determine an increase in the pure culture of fibroblasts, but, after a few passages, the fibroblasts cease to multiply and die. Carrel believed it possible that adult tissue contains substances toxic to the cells, which progressively overcome the effects of the growth promoting compounds. It was moreover noted that there was a definite difference in growth velocity in young and old animals, and differences were observed, the less marked, from serum from human beings of different ages.

Dr. Carrel [21] says: "It would be of importance to know what is the factor which causes the exaggerated connective tissue reaction to any trauma observed in dark skinned races. The serum of individuals of different races has not been studied from that point of view. It would be difficult to test human serum with reference to its inhibiting or noninhibiting action on fibroblasts, because the optimum results are obtained from homologous fibroblasts, and it is not very easy to keep a strain of human cells in active condition."

19. Rodman, W. L.: Influence of Race, Sex and Age in Surgical Affections, in Keen's Surgery, 4: 1139, 1908.

20. Carrel, Alexis; and Ebeling, A. H.: Heterogenic Serum, Age and Multiplication of Fibroblasts, J. Exper. Med. 35: 17 (Jan.) 1922; Action on Fibroblasts of Extracts of Homologous and Heterologous Tissues, ibid. 38: 499 (Nov.) 1923. Carrel, Alexis: Tissue Culture and Cell Physiology, Physiol. Rev. 4: 1-20 (Jan.) 1924.

ABSTRACT OF DISCUSSION

Dr. Rudolph Matas, New Orleans: When I was invited to join in the discussion of Dr. Rosser's paper, I thought the best contribution that I could make to the subject would be to supplement the study of the comparative surgical pathology of the American Negro which I published twenty-eight years ago, based on the statistics of Charity Hospital, New Orleans, by summarizing the experience of the same hospital in the division of anorectal diseases during the decennium 1914 to 1923, inclusive. During those ten years the grand total of admissions to the indoor department of the hospital amounted to 180,331 patients, of whom 102,089 were white and 78,242 colored. Of this total, 4,280 patients were admitted for anorectal diseases—2,191 white and 2,089 colored.

Our observations in New Orleans agree in the main with those of Dr. Rosser. The prevalence of anorectal diseases, as a whole, is about the same in both races (excess of whites, 2 per cent.). The hemorrhoidal disease, like varicosities in general, is much more prevalent in the white race. Hemorrhoids contribute 47 per cent. of the total diseases of the rectum; 65 per cent. white and 37 per cent. were colored patients. Prolapse of the rectum is also more frequent in the white hospital population (white excess + 12 per cent.). The ordinary pyogenic infections that lead to abscess in the anorectal region are about equal in frequency in the two races. Fistula in ano, which is so frequently the result of anorectal tuberculosis, contributes 23 per cent. of the total rectal diseases with an excess of 18 per cent. of black cases. Here the greater frequency of tuberculosis in the negro must be taken into account. Ulcer of the rectum, which is more frequently the result of specific infection (tuberculosis or syphilis), is also more frequent in the colored race (+ 18 per cent. excess). Stricture of the rectum other than cancerous, largely the sequel of tuberculous and syphilitic infection, is notably in excess in the negro (+ 68 per cent. excess). Condyloma, which is also a manifestation of syphilitic infection, is more frequent in the negro (+ 12 per cent. excess). Papilloma, usually of venereal and syphilitic origin, is more frequent in the negro (+ 20 per cent. excess). Benign rectal tumors (including polypus, adenoma, adenomyxoma, myoma) are more frequent in the whites (+ 66 per cent. white excess). Other unclassified nonmalignant tumors of the rectum appear more frequently in the whites (+ 10 per cent. excess). Carcinoma, which constitutes 1 per cent. of the total cases, appears in excess in the blacks (10 per cent. excess). Granuloma inguinale, which is not reported in the hospital division of rectal diseases, has been reported in nine cases in New Orleans, all in negro patients.

Dr. Rosser has laid special stress on the preponderance of stricture of the rectum as an illustration of the fibroid diathesis or fibrogenetic tendencies displayed by the negro in his reactions to irritation, trauma and infection.

I believe that nonmalignant stricture of the rectum is more frequent in the negro because syphilitic and tuberculous

21. Carrel, Alexis: Personal communication to the author.

infections are more prevalent in the race and especially in the urban population.

Stricture as a cicatricial contraction following precedent ulceration of the rectal mucosa is common to both races, and the histology of the scar tissue is the same in the two. The reaction to infection is essentially the same, but it is the greater frequency with which the colored population harbors the prime cause of the ulceration (the tubercle bacillus and the spirochete) that accounts for the greater frequency of the stricture in the negro. While I am not prepared to deny by histologic proof that such fibroid reaction in the negro is peculiar and racial by excess of connective tissue proliferation, I cannot convince myself from personal observation that there is any real difference in the histology of a rectal stricture as seen in the two races. I believe there is a great leap between the histopathology of cicatricial strictures of the rectum and the fibroid reactions that we see in the keloidal scars of the cutaneous surface. In the cutaneous cover of external hemorrhoids which Dr. Rosser has investigated, it is quite possible that the fibroid or "fibroplastic" tendency to hypertrophy may be a more frequent occurrence. But thus far there is no evidence to prove that the mucosa reacts in the same way as the skin.

We must be guarded in our interpretation of the histologic reactions of the tissues for fear of too sweeping generalizations, and this is especially true when we attempt to theorize on a purely phylogenetic or atavistic basis. We see this tendency in the interpretations that have been offered for the greater frequency of hemorrhoids in the whites as contrasted with the negro. They may seem plausible superficially, but are far from proved. In this connection the rarity of melanotic cancer and malignant melanosis in the negro is still a puzzle. When we consider the enormous stores of pigment that could be made the play of the same causes that are so destructive in the white race, the seemingly perfect control in which this exceedingly explosive physiologic material is held by the black race is an extraordinary example of the stability and persistence of hereditary traits.

Innumerable questions of great interest are suggested by Dr. Rosser's paper, and in fact by any discussion that touches on pathologic conditions in the races, and more particularly to those of us who are brought face to face with it in our daily environment.

DR. J. F. MONTAGUE, New York: I agree, in a general way, with the observation of Dr. Rosser in regard to the lesser occurrence of pruritus in the negro. I must, however, differ from him as to the causation of that fact. Rather than attribute it to any morphologic difference in the tactile end-organs, I would place the cause at the other end; that is, in the cerebrum. The appreciation of the sensation of itching being a psychologic affair, we can readily understand how in a mentally inferior race, such as the negro, the response would naturaly be less delicate than in the Caucasian race. In other words, the explanation I offer of the lesser occurrence of pruritus in the negro rests in psychologic and not morphologic differences between them and Caucasians.

DR. EDWARD G. MARTIN, Detroit: I would like to support Dr. Rosser in his statement as to the marked prevalence of stricture in the negro and the absence of hemorrhoids as compared with the whites. Detroit has a negro population of about 100,000. I have had the experience of operating on a large number of negroes and have found the most virulent type of strictures. I have never seen anything comparable among the whites—long tubular strictures that are thick and are particularly incurable without excision of the whole area; proctotomy is the usual procedure, after which there is marked relief, but this procedure needs to be followed by periodic dilation. It is a remarkable fact that I rarely find the strictures mentioned in the negro male. As to syphilis, in nearly all cases of stricture in negroes, there is a positive Wassermann reaction. Of course, we see many cases of syphilis among the whites, but we rarely find the bad strictures among the whites. Hemorrhoids I believe are automatically cured in many instances in the negro through their tendency to fibrosis.

BRONCHOSCOPY AS AN AID TO THE THORACIC SURGEON *

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Bronchoscopy in its modern developments bears much the same relation to thoracic surgery that cystoscopy bears to genito-urinary surgery. When the surgeon encounters a case of pyuria, he wishes to know whether the pus comes from the bladder or the kidneys and, if the latter, from which kidney. Obviously, he does not want to explore the bladder and both kidneys in search of the focus of disease. Just so, the thoracic surgeon encountering a case of purulent sputum does not wish to explore possibly all five lobes of both lungs in search of the purulent focus; and perhaps foreknowledge of bilateral involvement may render operation inadvisable. As the surgeon relies on the roentgen ray and cystoscopy, separately and combined in pyelography, so does the thoracic surgeon rely on the roentgen ray and bronchoscopy, separately and combined in pneumonography (Figs. 1, 2 and 3). As the cystoscopic assistant furnishes his chief with a specimen of a neoplasm for biopsy, so the bronchoscopic assistant brings accuracy to the diagnosis of thoracic disease. As the genito-urinary surgeon feels that exploratory operation on the kidneys and bladder should not be undertaken until all diagnostic means have been exhausted, so the thoracic surgeon recognizes that essential differences prevent following the lead of the abdominal surgeon in postponing diagnosis until the revelations of the exploratory operation are reached. Furthermore, as the surgeon sets aside certain cases as suitable for cystoscopic treatment rather than for operation, so the thoracic surgeon sets aside certain cases of pulmonary suppuration as proper for treatment by his bronchoscopic assistant.

THE SURGEON'S BRONCHOSCOPIC ASSISTANT

Some genito-urinary surgeons themselves do the cystoscopies necessary in their practice, and they do good work; but most surgeons find it best to have among their assistants one man who specializes in cystoscopic technic. Similarly, a few surgeons may prefer to do their own bronchoscopies. As a rule, however, the busy thoracic surgeon will find it best to have among his assistants a bronchoscopist prepared to localize lesions, to differentiate neoplastic from infective processes by inspection and biopsy, and to treat such cases of pulmonary disease as may be deemed unsuitable for thoracotomy or those in which operation is postponed. Such an assistant will be able to remove foreign bodies from the lungs and esophagus in practically all cases in which such intruders are present, with a cure in probably 98 per cent. of the cases.

BRONCHOSCOPIC SOUNDING

In certain cases, the surgeon doing a thoracotomy will find it of advantage to have his bronchoscopic assistant pass a bronchoscope through the mouth into the abscessed lung and find by sight the largest one of multiple cavities. With the bronchoscope in situ, the pal-

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pating finger of the surgeon on the exterior of the lung will have a sound on which to cut down with cautery or otherwise, as demonstrated by Shallow and Clerf.[1]

CONTRAINDICATIONS TO BRONCHOSCOPY

For present guidance, and subject to future revision, we have formulated the contraindications enumerated below. In many instances, they constitute reasons for postponement rather than absolute contraindications. Fulminating suppurative pneumonitis is a contraindication. The type of pleuritis that indicates imminent rupture of a purulent lung-focus into the pleura contraindicates bronchoscopy, not because bronchoscopy would precipitate rupture, but because it would be powerless to prevent it. Foci that have reached the pleura require external drainage. The lung can be drained through the mouth by bronchoscopy, but the pleura cannot. In some later phase of the case, the surgeon may desire aid of his bronchoscopic assistant either perorally or by retrograde methods in pleura or lung. As a patient moribund from sepsis or cachexia is beyond bronchoscopic aid, bronchoscopy is contraindicated in such cases. Severe, recent hemorrhage is at times a contraindication; but if the patient is weak from exsanguination rather than from cachexia, as in the case referred to in Figure 3, bronchoscopy may be strongly indicated. Organic disease of the cardiovascular system and hypertension of high degree may contraindicate bronchoscopy for disease.

SAFETY OF BRONCHOSCOPY IN DISEASE

Having a combined experience including the introduction of a bronchoscope, for various purposes, more than 5,000 times, and never having yet seen a death due merely to the introduction of the instrument, we feel justified in saying that, considered apart from the condition for which it is done, there is practically no mortality associated with bronchoscopy for disease. We have seen a number of deaths in moribund patients on whom no bronchoscopy was done. Some of these have died on the way to the hospitals, some in the hospitals after arrival, and some after arrival home subsequent to our refusal to employ bronchoscopy on the respective patients. Obviously, if we were to pass a bronchoscope on such patients, our statistics would show mortality. It scarcely seems necessary to add that, if there were any reason to hope that such patients might be benefited, we would not hesitate to use the bronchoscope. Some of the patients with pulmonary hemorrhage have been almost moribund from loss of blood. When there was hope of saving the patient's life, we did a bronchoscopy. If, however, the patient was in a hopeless state of toxemia or cachexia, or if there was a hopeless extent of involvement of lung tissue, we decided against a bronchoscopy. Obviously, in the borderline cases, it will not always be possible to select the hopeful from the hopeless cases. Hence, in such cases some mortality must be expected, and must be recorded when it occurs.

Fig. 1.—Pneumonogram of the living patient showing the value of pneumonography in outlining bronchiectatic conditions. The contrast with the pneumonogram Figure 2, showing normal bronchi, is very striking. Dry bismuth subcarbonate was insufflated bronchoscopically by Dr. Louis H. Clerf; the film was made by Dr. Willis F. Manges. The technic of pneumonography by dry bismuth insufflation is described by Jackson, Chevalier: The Bronchial Tree: Its Study by Insufflation of Opaque Substances in the Living, J. Roentgenol. 8:454 (Oct.) 1918. Clerf, L. H.: Bronchoscopic Lung Mapping in Diseases of the Lungs, Surg. Clin. N. Am. 4:104 (Feb.) 1924.

Fig. 2.—Pneumonograph by the Jackson method of bronchoscopic bismuth insufflation for the localization of the bronchi in reference to a small fragment. The bronchi are normal in shape and distribution, affording a graphic basis for comparison of bronchiectatic bronchi (Fig. 1). Film by Dr. Leon Solis-Cohen.

We had one death twenty-four hours after an attempt to remove a foreign body embedded in a cancer of the lung.

DIAGNOSTIC BRONCHOSCOPY

Bronchoscopy for diagnosis is a harmless procedure clearly indicated in practically every case of suppurative disease of the lung in which the advisability of thoracotomy is being considered. By means of the bronchoscope, the surgeon may be informed with the utmost precision not only as to the particular lobe involved but also as to the particular part of the lobe. By means of bronchoscopy, the thoracic surgeon has had added to his diagnostic means the accurate localization of pneumonography (Figs. 1, 2 and 3) and the practical certainty of biopsy.

TONSILLECTOMY AND LUNG SUPPURATION

Tonsillectomy as a cause of lung suppuration, recently recognized by Richardson,[2] has suddenly assumed enor-

1. Shallow, Thomas, and Clerf, L. H.: Proc. Philadelphia Acad. Surg., 1924.

2. Richardson, C. W.: Complications of the Operation for Removal of the Tonsils, Laryngoscope 32:667 (Sept.) 1922.

mous importance by reason of its frequency and seriousness. While its frequency relatively to the number of tonsillectomies is low, tonsillectomies are done in such enormous numbers that the frequency is high, and will become apparently higher as the cases become less frequently overlooked. While aspiration of infective materials at tonsillectomy does occur, as shown by

Fig. 3.—Pneumonograph of a woman, aged 24, with hemorrhagic suppurative disease of the lung supposed for three years to be tuberculous. Bronchoscopic diagnosis was malignancy. Bronchoscopically removed specimen showed adenocarcinoma (Fig. 4). Duration of bronchoscopy, one minute, fourteen seconds. The concave end of the shadow of the bronchoscopically insufflated bismuth indicated by the dart shows where the bismuth fitted over the cancerous nodule. Exsanguinating hemorrhages ceased after the bronchoscopic insufflation of bismuth, and had not recurred at the end of four months. After transfusions by Dr. H. Jones, the patient recovered strength; deep roentgen-ray irradiations by Dr. L. P. Larkin have shrunk the inoperable growth. Film by Dr. Willis F. Manges, who suggested that bismuth would probably have a hemostatic effect in addition to its localizing value.

Moore,[3] yet, as pointed out by Fetterolf,[4] it is a mistake to regard this as the only or even necessarily the most frequent route. Lymphatic and blood vessels are direct and potential channels of transmission from an infected and lacerated tonsil bed.

ANATOMIC AND PATHOLOGIC BASIS OF BRONCHOSCOPIC TREATMENT OF LUNG SUPPURATION

The theory of all bronchoscopic aspiration and treatment is founded on impairment or inefficiency of natural pulmonary defense. This defensive mechanism is composed of three elements: (1) cough reflex; (2) ciliary activity, and (3) germicidal action.

Cough Reflex.—The cough reflex is the watchdog of the lungs. If infective material passes the first line of bechic defense, the cough reflex still is active in trying to get rid of the intruder. To some extent, compression of the lung during cough may force up secretions from the periphery of the lung; but probably the greater burden of upward drainage of this region is borne by the cilia. The cough reflex is usually more or less actively on duty, unless drugged asleep by sedatives.

A few cases of pathologic absence or inactivity of the cough reflex have been seen at the Bronchoscopic Clinic, especially in children. Such patients may drown in their own secretions.

Ciliary Action.—If the infective material or any part of it gets deeper in the lung, the cilia respond promptly and powerfully to the "call to the colors," by sweeping the infective material and inflammatory products upward. The chief opposition to normal ciliary action is gravity. That ciliary action with the aid instead of the hindrance of gravity may drain the lung without any cough whatever is shown in one of our cases published elsewhere. The chief pathologic hindrance to ciliary action is inflammatory damage in the form of a mechanical impediment to ciliary movement, of obstructive granulations, or of destruction of the cilia themselves over the involved areas. Granulations have no cilia; scars have few. Just as the dropping out of individual members of a bucket brigade creates a hiatus with interrupted transmission, so areas of absent ciliary action interrupt the ciliary drainage upward. When sufficient pus has accumulated, the expulsion by cough becomes possible, and by it the accumulated secretions are projected across the area of defective ciliary activity. But this means stagnation, saprophytic activity and irritation, resulting in increased irritation and a vicious circle.

Here peroral bronchoscopic aspiration comes to the rescue in supplementing defective ciliary action. This has been demonstrated in numerous cases by the disappearance of the foul odor from the sputum after a few weeks' treatment by peroral bronchoscopic aspiration. As a result of prevention of stagnation, the pus becomes "laudable." This is the first evidence of improvement in many curable cases. Defective ciliary action we have shown to be a prime factor in asthma (Moore).

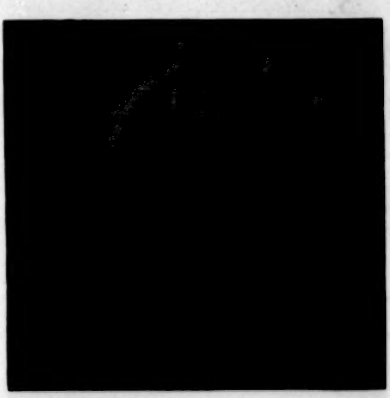

Fig. 4.—Adenocarcinomatous histologic structure in a bronchoscopically removed specimen, confirming a bronchoscopic diagnosis of cancer of the lung in a woman, aged 24, supposed to be tuberculous (Fig. 3). Histologic diagnosis by Dr. Baxter L. Crawford.

Germicidal Action of the Normal Lung.—If the first two lines of defense, the cough reflex and the cilia, fail to repel or expel the infective material, the third line of defense becomes active to annihilate the invader. The questions as to what constitutes this annihilating mechanism and how it acts are not yet conclusively determined, but they have been studied experimentally;

3. Moore, W. F.: Pulmonary Abscess, J. A. M. A. 78: 1279 (April 29) 1922.
4. Fetterolf, George; and Fox, Herbert: The Paratonsillar Tissues in Relation to Posttonsillectomy Abscess, Proc. Am. Laryngol. A., 1923.

and that germicidal action is a powerful factor in preventing lung suppuration is undoubted. Stillman has shown that it is more efficient in mice in cases of pneumococcic infection. Doubtless, the virulence of the strain is quite important as well as the type of organism; but that the germicidal defensive powers of all forms of life vary widely with the individual and at different times in the same individual is generally accepted. It is when these three defensive mechanisms fail that we are called on for aid.

BRONCHOSCOPIC ASPIRATION IN POSTTONSILLECTOMY LUNG SUPPURATION

When any one has infective material coughed into his eye, the ophthalmologist does not allow that infective material to be sealed up in the conjunctival sac, as in an incubating chamber, by the patient going to sleep that night with the eye uncleansed. On the contrary, the ophthalmologist promptly washes that infective material out of the sac. Here we have the key-note to treatment in case of aspirated infections. Instead of leaving aspirated material to incubate in the bronchi, we should remove it bronchoscopically, possibly not by washing, but certainly by aspiration. In the case of the bronchi, we have, however, this difference, that there is a powerful germicidal mechanism by which many organisms are destroyed. Therefore, we may wait for some evidence that the virulence of the infective agent is too great for the natural forces of drainage, and that germicidal activities are insufficient to cope with the infective invader. The foregoing applies very obviously to posttonsillectomic aspirated infections. But, as shown by Fetterolf and Fox, not all posttonsillectomic lung suppuration should be considered as of aspiratory origin. If the invasion has been by the hematogenous route, as soon as the suppurative processes reach the bronchi, the cough reflex and the cilia are called on for heavy duty in overcoming the infection. That they are often overwhelmed is evidenced by all the cases of lung suppuration that fail of spontaneous cure. That bronchoscopic aspiration is an aid to this inefficient drainage is proved by the number of cases thus treated, though we have been unable to prove the mechanism of origin in each case. The rapid breaking down with formation of a cavity with demonstrable fluid level, so frequently seen in posttonsillectomic cases, is very rarely seen even after many years' sojourn of a foreign body in the lung. This is true of such septic foreign bodies as bones and teeth. Moreover, after years of suppuration, healing is spontaneous and usually complete in 98 per cent. of the cases without any treatment whatever.

Leaving to the future the determination of the percentage of cases occurring by the different routes, air passages, blood vessels or lymph channels, we may say that our experience has corroborated that of Willy Meyer, Lynah,[5] Yankauer, Lilienthal and others, that early bronchoscopic aspiration will cure these cases, sometimes, as Willy Meyer has said, in an almost magic way. This "magic" result has occurred in the hands of Tucker, Clerf, Lukens, Moore, Yankauer, Lynah, Kernan, Jordan, Myerson and others, so that mere coincidence can be ruled out.

Fig. 5.—Fluid level in a pulmonary abscess, as developed three weeks after tonsillectomy, in a boy aged 9 years. Film by Dr. H. K. Pancoast.

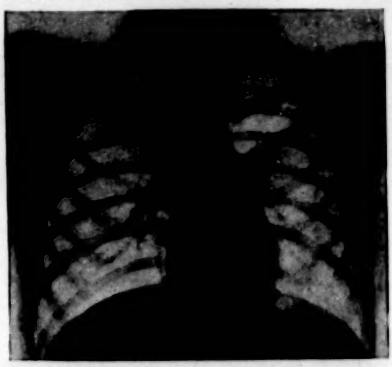

Fig. 6.—Same patient as in Figure 5. The abscess has healed. Cough, expectoration and all other symptoms disappeared after ten bronchoscopic aspirations by Dr. Gabriel Tucker. Six months later, patient remained entirely well.

Willy Meyer [6] has well said that:

> If suction alone, or combined with local treatment by means of bronchoscopy, can produce such remarkable clinical results a few weeks after the aspiration of septic material, it is not difficult to imagine that bronchoscopy with aspiration, as early as possible after the onset of lung symptoms, viz., as soon as the general condition of the patient permits, will reveal still more fulminant improvement. Case 37 proves this. One single thorough aspiration cured the patient. There is no doubt in my mind that not surgery in any form, inclusive of the artificial collapse of the lung, is primarily indicated in these terrible cases, which still occur so frequently, but bronchoscopy, with thorough aspiration, without or with local antiseptic treatment.

In considering the foregoing statement, it must be remembered that it expresses the opinion, not of a bronchoscopist, who may metaphorically as well as actually see things narrowly through a small tube, and who may be excessively enthusiastic because of certain remarkable cures, but of a skilful surgeon speaking from the broad point of view of a relatively enormous experience in thoracic surgery.

5. Lynah, H. L., and Stewart, W. H.: Roentgenographic Studies of Bronchiectasis and Lung Abscess, Am. J. Roentgenol. 8:49 (Jan.) 1921.
6. Meyer, Willy: Observations on Lung Suppuration and Its Treatment, Arch. Surg. 6:361 (Jan.) 1923.

Paul A. Lucas Intavee, M. D.

The foregoing refers to the now well established fact that excellent results follow prompt recourse to bronchoscopy in posttonsillectomic lung suppuration. Let us now consider the cases of well established abscess. Here, again, almost equally surprising and certainly more remarkable is the relatively rapid cure, by bronchoscopic aspiration, of well developed pulmonary abscesses showing a fluid level in the roentgenogram (Figs. 5, 6, 7, 8, 9 and 10). This also is no mere coincidence, as shown by the fact of its occurrence in the hands of all bronchoscopists of experience.

We heartily concur in the opinion of William H. Stewart that frequent roentgen-ray examinations should be made during a series of bronchoscopic treatments to determine progress. A careful record of the body weight, quantity of sputum, and leukocytosis should be entered on the L. H. Clerf bronchoscopic chart. If the trend is continuously unfavorable, treatment should be discontinued. So long as the condition is improving or stationary, bronchoscopic aspirations should be continued unless the internist and surgeon decide that external operation should be done.

PERIFOCAL SUPPURATION

In a case of abscess having a wall lined with pyogenic membrane, the neighboring bronchi, though retaining their walls, are in an inflammatory state that results in impaired or absent ciliary activity. The result of this stagnation is the development of new foci, abscessal or bronchiectatic. The bronchoscopic aspiration, with or without treatment, of this periabscessal suppurative zone is of fully as much importance as the aspiration of the fully developed abscess itself. Here, the bronchoscope is the greatest, in fact the only direct, means of prophylaxis of that most serious and intractable pathologic state, multiple abscesses.

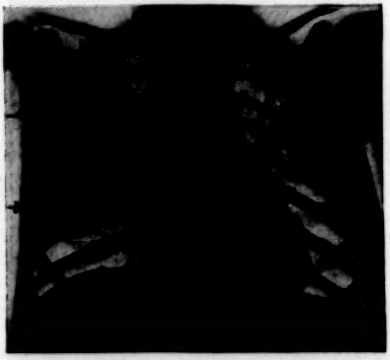

Fig. 7.—Posttonsillectomic pulmonary abscess in the right upper lobe, of about one month's duration. Prompt recovery followed two bronchoscopic aspirations without anesthesia, general or local, by Dr. William F. Moore. (Compare Figure 8.)

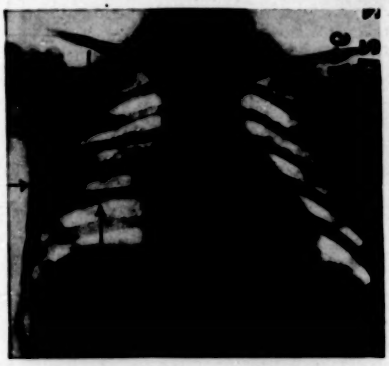

Fig. 8.—Same patient as in Figure 7, one month later. The abscess is shown to have entirely healed. The cough, expectoration and all other symptoms, and all pathologic physical signs, had completely disappeared after two bronchoscopic aspirations by Dr. Moore.

PERIBRONCHIAL ABSCESS

It is mechanically easy to penetrate a localizable suppurative focus that does not communicate with a bronchus; but the advisability of doing so will call for a consultation of the surgeon, the internist, the roentgenologist and the bronchoscopist in the particular case. The cases so far encountered at the Bronchoscopic Clinic are too few to warrant any basis for future guidance.

Cicatricial and other forms of bronchial obstruction due to inflammation are both preventable and relievable by bronchoscopic drainage in certain cases. Strictures can be dilated, granulations and granulomas can be removed bronchoscopically with all the facility afforded by the guidance of the eye.

Retrograde bronchoscopy is done through the chest wall, and has certain uses in the exploring and treatment of fistulas communicating with bronchi and suppurating foci.

Pleuroscopy is done through the chest wall for the removal of lost drains, the breaking up of adhesions, the locating of pockets, and the improving of drainage.

Benign growths in the lumen of a bronchus as a cause of suppuration can be diagnosticated only with the bronchoscope (Willy Meyer[6]). Bronchoscopic removal causes prompt subsidence of the suppuration, which has been due to obstructed drainage and aeration.

MALIGNANT DISEASE OF THE LUNG

In malignant disease of the lung, the bronchoscope has brought to the aid of the surgeon an absolute certainty of diagnosis not otherwise possible; and what is even more important, this absolutely certain diagnosis can usually be made at such an early stage of the malignant process that there is a chance to cure the patient by lobectomy. In the cases starting endobronchially, the diagnosis can be made at the incipience if opportunity for bronchoscopy is afforded. If the growth has begun in the parenchyma, the diagnosis may not be possible until a bronchus is compressed or suppuration has invaded a bronchus. In Figure 3 is illustrated a case of endobronchial type of growth in which an early bronchoscopy would have given the surgeon a good chance to cure the patient by lobectomy.

Such cases have been proved by necropsy to be, in their incipience, small and without metastases (Lord[7]).

There are two phases of the endoscopic appearances that are characteristic, and that are at once apparent to

7. Lord, F. T.: Diseases of the Bronchi, Lungs and Pleura, Philadelphia, Lea & Febiger, p. 445.

any one who is familiar with the normal endoscopic images. They are deformity and fixity. To any one familiar with the beautiful thin edges and the rhythmical enlargement and diminution, elongation and shortening, twisting and bending, the "wooden" appearance of bronchi involved in the infiltrative process is very characteristic. In endobronchial cases, we have either a mass, nodule, fungation or ulcer, most often a nodule. At relatively an early stage, we have endoscopically visible bleeding. Cases illustrating the potentially life-saving diagnostic value of the bronchoscope in malignant disease of the lung have been reported by Ingersol, Imperatori, Yankauer, Lilienthal, Willy Meyer, Emil Meyer, Arrowsmith and many others.

The following conclusions refer only to bronchoscopy for disease, not for foreign body.

CONCLUSIONS

1. In dealing with pulmonary disease of other than aspirated foreign-body origin, the bronchoscopist is merely an assistant to the internist and the surgeon.

Fig. 9.—Postpartum pulmonary abscess involving middle and lower lobes in a woman, aged 18. Ether had been used during the labor. The right diaphragmatic shadow is lost. Complete recovery with gain of 15 pounds (6.8 kg.), and total disappearance of cough and expectoration followed four bronchoscopic aspirations under local anesthesia, by Dr. Robert M. Lukens. (Compare Figure 10.)

2. The best results for the patient affected with pulmonary disease will accrue from close cooperation of the internist, the surgeon, the roentgenologist, the pathologist and the bronchoscopist. The internist can tap, look and listen on the outside; the roentgenologist can look through the patient; the bronchoscopist can look inside the living lung and can bring up tissue and uncontaminated specimens of secretions for the pathologist, and, moreover, can render the normal and pathologic passages opaque for study by the roentgenologist. With such diagnostic means at his disposal, duly coordinated by the internist, the surgeon will have many otherwise impossible chances of cure of pulmonary suppuration and malignancy.

3. Pneumonography with bronchoscopically insufflated powdered bismuth subcarbonate is the greatest aid to the localization of pulmonary disease since the development of the science of roentgenology itself.

4. In most cases of lung suppuration in which external operation is deemed inadvisable, peroral bronchoscopic aspiration should be used weekly or oftener. Many such cases have thus been cured, and others improved; not one has been made worse.

ABSTRACT OF DISCUSSION

Dr. Thomas McCrae, Philadelphia: The most efficient treatment of abscess of the lung demands good team work by the surgeon, bronchoscopist, roentgenologist and internist. The best method for each patient should be chosen. In any decision as to treatment, accurate diagnosis is essential, first as to the presence of an abscess and secondly as to its position. An abscess situated in the periphery of the lung and not communicating with a bronchus should be treated surgically if it is in a position possible to reach. If the abscess communicates with a bronchus, there is no question of the value of bronchoscopic drainage. We are all aware of the fact that without any special treatment, except perhaps postural drainage, an abscess may drain and recovery follow very promptly. But such cases are the exceptions, and the results from bronchoscopic drainage in skilled hands are so striking that its value cannot be questioned. The treatment should be begun as early as possible, and this depends on prompt diagnosis. In this, bronchoscopy is an important aid. In some quarters it is supposed that bronchoscopy is a dangerous procedure. The fact that about 750 bronchoscopies for various forms of pulmonary suppuration have been done on fifty-three patients by Dr. Lukens and Dr. Moore without any accident seems a good answer to this objection. Certainly, bronchoscopy should not be done by one who is not sufficiently skilled. The reasons for the value of bronchoscopic drainage are evident. Any abscess requires proper drainage; and because a patient with a lung abscess is bringing up large amounts of pus, it does not follow that the drainage is free. There may be obstructing granulations in the bronchi, and a certain amount of retention of the secretions. With the bronchoscope, these can be recognized and treated properly. The bronchoscope drains better than Nature can. In addition, local treatment can be applied which often seems to be of benefit. Clinically, the results are excellent and the rapidity with which an abscess improves, sometimes after one bronchoscopic drainage, is often very striking. Bronchoscopy may show a foreign body which may be responsible for the abscess.

Fig. 10.—Same patient as in Figure 9, three months later. The suppurative process on the right side had healed and the patient was discharged well.

DR. W. F. MANGES, Philadelphia: With regard to the use of bismuth in localizing the lesion in the lungs: That has been done quite a number of times in Dr. Jackson's department and we have yet to have any untoward result from the insufflation of dry bismuth powder. With the roentgen ray we often see pathologic conditions in the lower lobes of the lungs that we cannot describe. We see increased density, but are unable to say whether there are quantities of exudate in dilated bronchi, whether it is an infiltrating process of the nature of a new growth, or whether it is of a chronic inflammatory nature. With the insufflation of the bismuth, the differential diagnosis is cleared up immediately. In that class of abscess in which localization is essential, and before the abscess drains into the bronchus, I mean particularly the abscess not directly in contact with the large bronchi, the roentgenologist can see the lesion, but often he is unable to say whether it involves the middle or the lower lobe; whether it is the lower portion of the upper lobe or the upper portion of the lower lobe. Frequently, we cannot tell from roentgen-ray examination just what portion of the lung is involved. But with insufflation of bismuth it is always clear just what particular branch of the bronchus is involved. I wish that some of you might see the results of drainage. You would be impressed with the efficacy of the procedure. Natural drainage is greatly improved by means of the bronchoscope and repeated applications of instruments through the bronchoscope.

DR. THOMAS A. SHALLOW, Philadelphia: Too many physicians believe that bronchoscopy is an art that can be acquired from observation and from reading. As a result of this erroneous view, ghastly disasters occur to patients who are under the care of untrained men. Hippocrates taught that a certain percentage of lung abscesses were spontaneously cured when they broke into the bronchial tree. From this time the question of open lung abscess has been in status quo. What has general surgery done to improve these cases? We have permitted the patients to assume certain postures in order that the abscesses may empty themselves, a position which the patient finds helps him automatically. Too often we permit the walls of the abscess to become moss grown, so to speak, with the saprophytic organisms of putrefaction, and if we have not criticized, we stand by with closed hands, objecting to the introduction of cleansing and the instillation of antiseptic solutions. As noted by Dr. Jackson, his department has used the bronchoscope 4,500 times without a fatality. Some of the objections that are put forward to the use of aspiration and treating of lung abscesses are drawn from the conclusions set forth by the untrained or the partly trained bronchoscopist. I have seen patients admitted in whom foreign bodies had been pushed through the bronchus with resulting abscesses. I have seen empyema, pneumothorax and other chest complications as a result of the improper use of this instrument. These failures do not condemn the instrument but only emphasize the fact that the bronchoscopist must be a highly trained man. The question of bronchiectasis is so important that no other procedure should be considered before a thorough course of bronchoscopic drainage has been instituted. If this treatment is instituted before the cartilaginous plaques in the walls of the bronchial tube have been absorbed and before the musculature of the bronchial tube has been bound down to the adjacent structure, an absolute cure is assured. From the advantageous results in bronchiectatic cavities, in the diminution of the secretion, the lessening of the putridity and the diminution of the cough, we have an index of what can be done in a small circumscribed cavity where repair is progressive. As to the absolute diagnosis of malignancy by means of the bronchoscope, there is no other means at our disposal which will give us more than a suggestion, and here we have an absolute certainty.

Influenza Death Rate in 1923.—The death rate from influenza in 1923 in seventy-seven cities was 21 per hundred thousand population. In 1922 data were available for seventy cities, and the death rate was 16 per hundred thousand.—*Pub. Health Rep.* **39**:1667 (July 11) 1924.

EXTERNAL CANCER*

MARTIN F. ENGMAN, M.D.
ST. LOUIS

The recognition of those clinical formations which characterize malignant growths of the skin is greatly assisted by a knowledge of the processes that operate to produce them. Epithelial cancer may spring from any of the various layers of the surface epithelium; from the ducts or glands of the skin; or from embryonic misplacements ("cell rests"). The impetus of growth which stimulates a group of cells to malignancy is unknown, yet one must conclude from known facts,

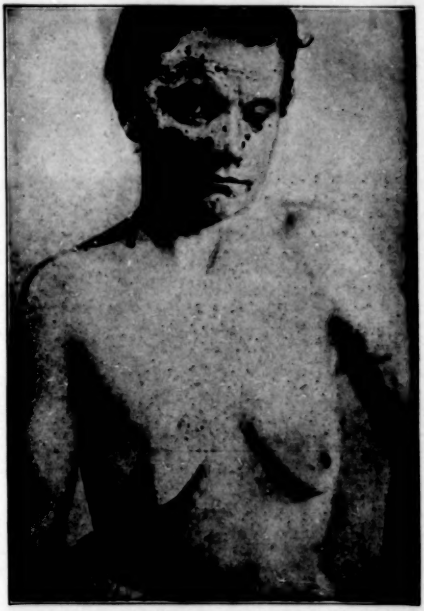

Fig. 1.—Multiple basal cell carcinoma with multiple benign cystic epithelioma and various types of nevi coincident.

based on experimental research, histopathology and years of clinical study, that a relative change in the environmental conditions surrounding these cells in certain locations is a factor not to be overlooked. The environmental conditions that influence the cycle of the cells to produce cancer occur in that decade of life when marked physical, nutritional and chemical changes begin in the skin. These first occur in the elastic and connective tissue elements and extend to the lymph and blood supply. Again, a potent change effecting the epithelial cells, usual in middle life, is brought about by various traumas of actinic, mechanical, chemical and inflammatory origin. Chemical and histologic investigation has demonstrated the suggestive fact that changed physi-

* Read before the Section on Pathology and Physiology at the Seventy-Fifth Annual Session of the American Medical Association, Chicago, June, 1924.

cochemical conditions surrounding the cell may induce that abnormal potentiality of growth called malignancy, and that these physicochemical conditions may in turn be induced by "life's wear" or by various forms of trauma. When a group of cells begin this abnormal, malignant, bolshevik existence, the objective appearance and clinical course of the tumor which is produced

Fig. 2.—Multiple nevi in middle life, with a large epithelioma of the left lower portion of the back.

depends on the source, character and type of the cell of which the tumor is composed.

Histologic investigations have discerned a small group of cells budding from some fixed, normal, anatomic part of the skin or its adnexa, or evidence of activity in a clump of cells attached to some normal part or lying free in the cutis, as the earliest beginning of malignancy. The cells of these groups show degrees of an abnormal arrangement of their nuclear chromatin and certain other abnormalities in their morphology; but such abnormalities in the epithelial cell are always preceded by slight or marked abnormal conditions in the cutis, degenerations of the elastic tissue, changes or degeneration of some form in the connective tissue, or evidences of fixed cell proliferation, or by lymphocytic infiltration. An epithelial cell, when surrounded for a period of time by such a changed tissue environment, may become malignant. This may occur whether the preliminaries in the tissue occur about a clump of embryonal, nevus cells or about an area under the epidermis; in the latter event, the basal or squamous cells may, independently or together, be incited to abnormal proliferation and malignant growth. The first step must be a small mass of cells packed together or clumped, from which springs the tumor, and the clinical characteristics of the resultant tumor must depend on: (*a*) The type and characteristics of the cell of which it is composed; (*b*) the resistance to growth in the environment (the patient's reaction); (*c*) the reaction of the kindred cells and that of the surrounding tissue, or (*d*) incidental factors, such as trauma from medical or surgical interference or treatment, or accidental trauma.

Epithelial cancer of the skin is usually classified according to the type or genesis of the component cells; namely, (1) basal cell cancer or rodent ulcer (Jacob's ulcer); (2) prickle or squamous cell cancer; (3) nevocarcinoma or melanoma, and (4) Paget's disease or dyskeratosis of Darier. This classification has thrown much light on the whole subject of cancer of the skin, but I believe that some confusion has arisen in trying to classify forcibly some of the tumors encountered in clinical experience. Tumors not characteristic of any type are seen, and also those of mixed type. Again, from the clinical study of the so-called precancerous lesions of the skin, a certain type of cancer may be expected, the usual result of such a process, when a tumor composed of cells of another type may be encountered. For instance, one may expect after keratosis senilis or xeroderma pigmentosum either a rodent ulcer or squamous cell tumor. Sailors' skin usually begets squamous cell cancer, yet the basal cell type is frequent. In other words, basal cell cancer is generally conceived as from embryonal rests, which is most frequently the origin, yet clinical facts demonstrate that actinic and other forms of trauma may incite the normal basal

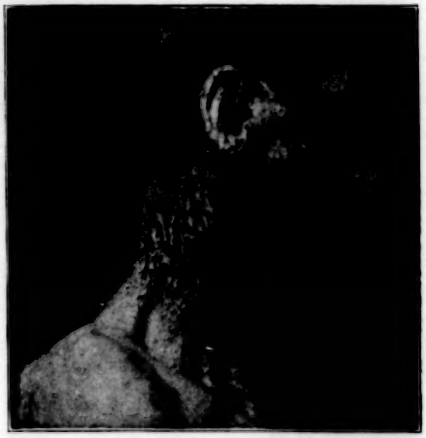

Fig. 3.—Acquired type of xeroderma pigmentosum in a farmer (a precancerous condition with beginning carcinoma in front of the ear).

cell layer to malignant proliferation. Again, in a basal cell cancer, when it is long existent and under the influence of improper chemical treatment, there may be incited malignant squamous cell proliferation from the prolonged irritation and changed conditions, either induced by the basal cell process or by the chemical treatment of it, or both. These conflicting clinical experiences are surprisingly correlated and elucidated by the work of Burrows [1] based on the packing of cells,

1. Burrows, M. T.: South. M. J. 17:233 (April) 1924.

with the resultant retention of a growth stimulus emanating from the metabolism of the normal cell.

BASAL CELL CANCER

Basal cell cancer most frequently originates from an embryonal misplaced cell group in any portion of the skin or from an abnormal growth stimulus acting continously on a definite number of normal cells of the basal layer of the epidermis. The pure basal cell tumor appears on the skin as a pinkish nodule of various sizes, usually being quite small when first noticed. It is composed of a mass of cells packed closely together, pushing the superincumbent epidermis outward, stretching the horny layer. On account of the translucence of the cells of which the growth is composed, together with the other factors enumerated above, one encounters a pinkish, hard, shiny little tumor, movable with the skin. The tumor grows very slowly if not interfered with, and seems to have inherent cycles of growth or periods of growth and rest. Usually, however, inadequate treatment or trauma adds to the impetus of growth, and rapid extension dates from some form of improper interference. Even without interference, the crowding together of the cells as the tumor increases in size induces nutritional and degenerative changes in the center of the lesion, succeeded by crust formation, which allows the access of suppurative micro-organisms, with consequent stimulation of growth and peripheral extension. This extension progresses concentrically, or it may extend in one direction more than in another, dependent on the local physical or anatomic characters of the part on which the lesion may be situated. In the former method of extension, an orbicular, more or less deep, crusted or open suppurative ulcer is encountered, while in the latter method an ulcer of various shapes is produced. The extending, infiltrating border, being composed of pure tumor cells, partakes of the clinical characters of the original nodule; i. e., it is hard, pinkish and shiny (pearly), with a breadth (broad or narrow) dependent on the disintegrating process behind it.

Fig. 4.—Presenile, precancerous skin, with a well developed epithelioma of the eyebrow.

The condition described may proceed to an ulcer of any size, from one of a centimeter in diameter to one covering and destroying, by infiltration and degeneration, a large portion of the skin of the face. The virulence of the infiltrating cells may be so stimulated by chemicals and by micro-organisms that cartilage may be swept away and bone deeply infiltrated. The progressive tumor formation tends toward the point of least resistance, into soft cellular tissue; about the lids or canthi, for instance, toward the orbit. On the cheek or body, or on firm, resistant tissue, the tumor cells may extend very superficially without disintegration and form a plaque on the skin, pearly and of an ivory tint, simulating morphea, with the rolled pearly border ever in advance. Intercurrent, incidental factors acting on the basic process described above produce the various clinical types enumerated in the clinical descriptions of the disease.

Basal cell cancer occurring in early life is always, in my experience, associated with the coincident appearance of a nevus; in later life numerous nevi are frequently associated with rodent ulcer.

The incidence of numerous congenital nevus-like tumors called benign cystic epithelioma is quite frequently associated with rodent ulcer or multiple basal cell cancers. This is illustrated by Figure 1, in which case the nevi began to appear at the ninth year. When the patient was seen, at the age of 34, the skin of the face, neck and body was peppered with dozens of nevi of various clinical and histologic types and with numerous lesions presenting the clinical and microscopic characters of both benign cystic epithelioma and basal cell cancer. Three such cases of equal severity have come under my observation, none of them, however, presenting those peculiar pigmentary appearances of the skin seen in xeroderma pigmentosum. Less striking instances of the same type of individual are not infrequently encountered in a cancer clinic, multiple nevi of various forms being associated with multiple basal cell cancer. In such instances, those of minor type, the nevi usually begin to appear at puberty, at the climacteric or after a severe illness. Later, maybe years later, the malignant basal cell change may occur in some of the nevi (Fig. 2). These cases are a type unto themselves, sometimes hereditary, always congenital. Trau-

Fig. 5.—Melanotic carcinoma of the ear, with rapid permeation and metastasis in the glands.

matic basal cell cancer occurs later; it is usually found on a senile skin; it degenerates, crusts and extends more rapidly and is more malignant. This is quite the reverse to the prickle cell tumor, which is far more malignant in the young than in the aged.

The basal cell type of cancer, when stirred into virulence, permeates, infiltrates and destroys more rapidly but more superficially than the prickle cell type. It is not prone to metastasize, but may do so and involve adjacent lymphatic glands in very rare instances; probably when lymph channels are opened by secondary inflammation, rendering permeation a physical consequence.

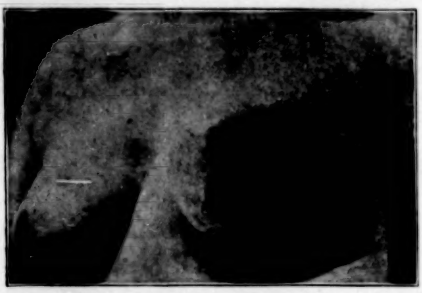

Fig. 6.—Mammary type of Paget's disease.

PRICKLE CELL CANCER

Prickle cell cancer is a traumatic cancer, the result of irritation. I do not believe that Billroth and others were far wrong when they affirmed that a previous lesion with changes in the cutis was necessary for the development of squamous cell cancer.

The occurrence of such types of cancer on lesions induced by trauma is a well known clinical fact, and histologic and experimental knowledge almost justifies the assumption. Cancer occurring on pathologic conditions of the skin induced by light, chemicals and mechanical trauma and by injuries induced in the tissues by numerous inflammatory, pathologic processes such as lupus, psoriasis, eczema and syphilis is a daily clinical incident. The injury, whatever it may be, must produce effects which continue for a long period of time: intermittent chemical action for a long period, or irradiation, or disturbance in an inflammed area for years, such as is seen after the infective granulomas. Prolonged irritation in this way seems to cause prickle cell proliferation instead of basal cell, which is peculiar. In all the precancerous lesions, there is a distinct preliminary change and disturbance in the cutis or tissues surrounding the epithelial elements. Malignancy in this instance is an orderly, step-by-step event, the epithelial cells showing preliminary change in their morphology before malignant infiltration begins; this has been well described by Darier, Fordyce and others. These preliminary, precancerous, morphologic changes can be studied in the so-called keratosis senilis, Bowen's precancerous keratosis and certain other chronic affections of the skin.

The prickle cell is a functionating cell, more active, more highly differentiated than the basal cell, and, on account of the biologic characteristics of the cell, together with the environmental tissue conditions surrounding the malignant cells, the resultant tumor is quite different clinically from that produced by the basal cell.

There is formed a tumor which seems to cause a more rapid reaction on the part of the cutis; rarefaction, degenerations and mononuclear infiltration precede the infiltration by the epithelium and no doubt pave the way by reducing the resistance of the cutis to epithelial infiltration. Thus, given a small group of cells which have attained great potentiality of growth, surrounded by succulent, more or less weakly resistant environmental tissues, the objective clinical appearance of the resultant tumor and its subsequent behavior would obviously depend on the activity or rapidity of growth of the malignant cells, their location, environment, the adjacent tissue reactions, and various accidental and incidental factors.

In a lesion of the skin or mucous membrane produced by a burn, granuloma, bite, mechanical instrument, dental plate, tobacco pipe or cigar, chemicals (tar, pitch, etc.), or any chemical or mechanical device or inflammatory, pathologic process which continues to produce irritation and consequent changes in the tissues, the epithelium resting on that area or at the edge of or within the area may begin to proliferate in a malignant way and infiltrate the tissues until the edges and base of the lesion become hard, inelastic and raised, and a nodular growth is formed. Therefore, when infiltration and induration occur in a chronic ulcer or injured patch of skin, malignant change should be suspected.

Keratosis senilis (seborrheic wart) is potentially cancer. The material is there of which cancer is formed, either of the basal or prickle type, and, rarely, of the melanotic type.

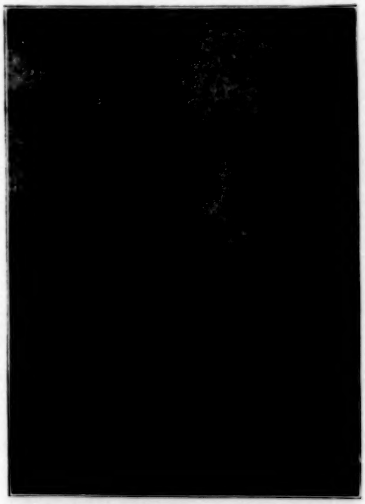

Fig. 7.—Extramammary type of Paget's disease.

As the individual ages and responds to life's wear, the skin undergoes certain changes which occur in the cutis bed, with its minute lymph and blood channels, on

which the epithelium rests. Through the effects of light, physical change at points of motion and friction and other contributing causes, a greasy, circumscribed patch is formed, usually preceded or accompanied by slight or marked brown pigmentation. The epithelial cells in such a patch are atypical, their routine is changed, and their metabolism abnormal; therefore the oily and pigmented appearance of the patch. Such is the scaly area called keratosis senilis, or seborrheic wart. If the patient lives long enough, the patch will incubate an epithelioma of some type. Some patches of keratosis senilis are easily healed by acute sunburn or by chemical reducing agents, the roentgen ray, radium, etc. Some undergo spontaneous involution, though rarely. The lesions may remain superficial if rodent ulcer supervenes and it is not disturbed, but this type quickly penetrates deeply into the tissues, if irritated. Prickle cell cancer of this origin is very virulent, rapidly growing, and may metastasize into the lymph glands early. The process may take years to become malignant; but, when once the patch takes on induration with nodular formation at the edge, extreme virulence is the rule.

The changes produced in the skin by the roentgen ray are similar clinically and microscopically to those changes occurring in xeroderma pigmentosum and, in turn, the latter to those which occur in senility. All three are prone to epithelioma on account of the basic similar effects produced on the cutis by the roentgen ray, actinic light and life's wear (senility). All three produce abnormal pigmentation, scaly, warty patches, and atrophy. The condition known as xeroderma pigmentosum is an exaggerated form of presenile skin: a skin which is affected for some unknown reason by the actinic rays of light which produce freckles, pigmented nodules, telangiectases, atrophic spots, scaly or verrucous patches and lesions. Here we have the basic changes in the cutis and epidermis for the production of either basal cell or prickle cell cancer, and in certain instances both have occurred. All the cases in my experience have developed prickle cell cancer but one. The acquired type of xeroderma pigmentosum occurs usually in farmers and presents late in life the characteristics of the classical disease of earlier life (Fig. 3).

When one has spent years in the observation and study of cancer of the skin in a large cancer clinic, one's thoughts naturally tend to generalizations, as to types of persons prone to cancer. When xeroderma pigmentosum is taken as a fixed type, one encounters a character of skin that is analogous to it, but in a much milder degree. Types, although not presenting the skin of xeroderma pigmentosum yet having some of the milder attributes of it, are found, in which there occur quite early in life senile changes in the skin which render them prone to cancer (Fig. 4).

MELANOMA

Melanoma, or melanotic carcinoma, spoken of by some on account of its origin as nevus cancer, may spring from pigmented moles or from a precancerous process with pigment formation, such as is spoken of by Dubreuilh as "circumscribed precancerous melanosis." It is a well known clinical fact that pigmented moles are dangerous principally in their proclivity to malignant degeneration, which one can readily understand from the study of the histology of the lesion, as they are composed of embryonic cells kept, as Unna says, on an attenuated and less resistant cutis. Therefore, injury in any form to the cells composing the nevus is dangerous.

According to Wilfrid Fox, a mole may become malignant in any one of four ways: 1. The mole may ulcerate and bleed and then perhaps heal slightly, but during this period the neighboring lymphatic glands may be noticed to be enlarged, with pigmentary secondary growths. These ulcerations increase to a greater size than the primary growths, and after the ulceration of the skin, discharge an inky fluid. 2. The mole may increase in size, forming a permanent tumor and becoming much deeper in color. Without any ulceration, secondary growths may appear in the neighboring lymph glands and almost simultaneously in all parts of the body as small deposits of pigment in the skin, the patient finally dying from cachexia and interference with some vital organs by the secondary growth. 3. More rarely there may be no change in the mole at all, and the first sign of malignancy noticed is the presence of metastasis. 4. The mole may become active, with little secondary black dots about it from permeation with the lymphatics, the mass eventually forming the so-called melanotic rodent ulcer with no secondary growth in the lymphatic glands or elsewhere. Clinical observation has confirmed the fact time and again that apparently simple blackly pigmented nevi may at any age begin to take on active growth which will result in malignancy and the death of the patient (Fig. 5). That in the large majority of instances they are of epithelial genesis is now accepted, although certain moles and soft nevi that become malignant may spring from the endothelium, or possibly, as Ribbert asserts, they are the result of "chromatophores." The "circumscribed precancerous melanosis" of Dubreuilh frequently occurs on the feet of old persons from some slight injury and exists in a more or less inactive, latent state for some time, when for some reason they become active, showing exudation and the formation of pigment, which extends laterally and into the lymphatics by permeation, with subsequent metastasis. The melanotic whitlow of Hutchinson is a curious growth occuring on the finger in the form of an onychia ulceration following some slight injury. Pigmentation supervenes after the injury, the lesion becoming bluish-black and ulcerating and oozing a dark fluid, which may stain the dressing. The accumulation of pigment that occurs around the temple and edges of the hair in old persons without the clinical appearance of seborrheic wart but somewhat scaling, frequently becomes papillomatous and sometimes degenerates into a pigmented cancer. This, no doubt, should be classified with Dubreuilh's "circumscribed precancerous melanosis." They, however, rarely become malignant unless frequently stimulated by inefficient and improper treatment. We might say that types of melanotic carcinomas are almost benign in their slow extension and nonmalignant behavior.

PAGET'S DISEASE

There are several types of Paget's disease which shade gradually into one another. It may occur on the lip, vulva, penis, umbilicus, buttocks, chest and back or, in fact, on any portion of the skin. In my experience, the midsternal region is quite a frequent location. Clinically, the disease may be divided into the mammary type and the extramammary type. Bowen's precancerous keratosis (Darier's dyskeratosis) are undoubtedly types of extramammary Paget's disease. The condition, when it occurs on the breast, does so most frequently in middle life, and begins as a dermatitis-like eruption either on the nipple or on the areola, and

slowly extends. The early symptoms are itching or burning, reddening, and a distinct thickening of the tissues accompanied by scaling. The process extends slowly, and in the course of time the surface may become denuded of the horny epithelium and become dusky red. Crusts later replace the scales, and the whole surface takes on a disklike or cardlike infiltration, with sharply defined or rolled borders. The denuded portions may be covered with crusts or oozing, sticky, homogeneous débris. The disease may remain in this stage for a long time, even years, before distinct clinical carcinoma of the breast develops. This is heralded by a contraction of the nipple, obvious formations of neoplasms in the breast itself, or the involved area may become granular in appearance, ulcerated, greatly thickened and raised, with erosion of the nipple and deep excoriated points of ulceration. The process may extend slowly until all the skin of the breast may be involved, before the development of a distinct neoplasm in the breast (Fig. 6).

The extramammary type of Paget's disease differs in its clinical and histologic features from an epithelioma, but to all intent it is probably the same process modified through environment or location. The most suggestive and valuable articles on this subject are those of Bowen and Darier, mentioned before.

In the extramammary type, Paget's disease may be mistaken for a patch of chronic seborrheic dermatitis, but it is a question whether such a dermatitis can precede this entity, and I believe it is now agreed that the process is one distinct from all others. No one that I know of has watched the process from its incipience; therefore, when it is first observed it has a characteristic appearance. These patches are seen as sharply described areas, situated anywhere on the body with well defined borders. The patch has a characteristic, dusky tint, and is slightly scaly and atrophic looking, the whole picture showing a chronic progressiveness. The tendency is to progress peripherally, sometimes more in one direction than in another, giving the patch various shapes. One portion may cicatrize while another portion extends, or cicatrization may occur in the center. In very large patches where this has occurred, a relapse in the cicatrized portion may be seen in the form of a superficial ulceration, crust, or a small nodule, an attempt at tumor formation. The whole process is very slow, chronic, superficial as a rule, and does not cause deep or large tumors unless a vital lymphatic region is invaded, as occurs when a region such as that of the vulva, penis, lip or scalp is involved. On account of the location of the extramammary type, there is usually no tendency to excoriation of the horny epidermis as is seen in the mammary form. The process, as I said before, is slow and chronic, sometimes undergoes involution, and is very rebellious to treatment. One case of mine, in which the process almost encircled the chest, and involved and wiped away the right breast, lasted for forty years. The patient died of senility at the age of 93. The process is undoubtedly of a cancerous nature, and sometimes metastasis occurs.

It is a question whether Paget's disease is from the very first malignant or whether the malignancy is a result of prolonged inflammation; but from my own clinical observation it seems to me that at the site of these occurrences there must be some former irritative process which lays the foundation, in changes in the cutis, for malignant proliferation and infiltration by the epidermis.

RADIATION THERAPY OF MALIGNANT DISEASE*

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In the case of practically every new curative agent, the medical profession sooner or later experiences the unhappy realization that its value has been greatly overrated, and that the first exaggerated evaluation has to suffer extensive revision before the true worth of the method or means is firmly established. Deep radiotherapy has not proved any exception to this generality, and the present is a period more or less critical in its history.

Although radium and roentgen rays have shown themselves indispensable means of treating superficial malignancies, their value in deeper seated lesions is still held decidedly in question by important groups of scientific men. It is a misfortune that so many have been willing to write of their results without waiting for the passage of at least a three or five year period, many of the published results thus constituting immature data which are useless as evidence for aiding in arriving at a definite scientific judgment. One might cite as examples of such literature abortive reports on "results of a year's deep radiation therapy for carcinoma of the digestive tract," or "a review of six months' experience with radium." On the other hand, we might refer to such a report as appeared in a recent number of a prominent French journal:[1] A woman, aged 57, with mammary cancer not yielding to competent roentgen-ray treatment, underwent operation ten months later. The operation was not especially difficult, yet the patient died eighteen hours after operation with the appearances of toxemia. In the face of all other possibilities as to the cause of death, and although the operation was done ten months after the roentgen-ray treatment had been completed, the author very definitely but unjustly intimates that the roentgen ray was responsible for the patient's sudden death. Still another author[2] selects from his experience a most tragic case of periosteal sarcoma of the sacrum, in which the patient, when first observed, already had a tumor the size of a tangerine. Naturally, there was a fatal end, in spite of radiotherapeutic endeavor. It is inconceivable that the author should do so; yet he reaches the conclusion from this one tragic extreme case that both roentgen rays and radium act unfavorably on malignant disease. Such abortive and misinforming literature can do no good, and it does create a great deal of prejudice against a method which has been characterized by no less an authority than James Ewing[3] as "the first rational treatment of cancer ever devised."

There is no known general treatment capable of arresting the development of cancer. The best modern attack consists of complete removal (when possible) at one operation of the whole of the neoplasm, together with its lymphatics and the associated glands which form the route by which the cancer cells pass to other regions. This removal may be done with the knife, the cautery or electrocoagulation. The surgeon employing radioactive agents should attempt to carry out the same plan. One should treat throughout the mass as well

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1. Leriche and Arcelin: Lyon chir. 20:675 (Sept.-Oct.) 1923.
2. Reder, F.: Tragedy of a Sacral Periosteal Sarcoma, Am. J. Obst. & Gynec. 6:266 (March) 1923.
3. Ewing, James: The Mode of Radiation on Carcinoma, Clinical Studies from the Memorial Hospital, 1919-1923, p. 331.

as at the periphery; irradiation should be uniform and sufficiently powerful to neutralize in every cell the tendency to proliferation. The ideal radiation method of treating cancer will be one which, while doing the greatest harm to the tumor, does the least damage to the recuperative powers of the patient.

It seems clear that the curative action of radiation (including in this discussion both radium and short wave length roentgen rays) is not the result of a direct effect on the tumor cells alone; for there is unquestionably a certain reaction of the surrounding normal or diseased tissues. Deep radiation therapy is simply the application at a depth of a dosage equivalent to that required to produce a known effect in an analogous condition on the superficies. It is merely an extension of the superficial roentgen-ray therapeutic technic worked out for the deeper tissues through a knowledge of some new physical principles.

Naturally, these remarks can be nothing more than a statement of the point of view of one worker and his associates. In our opinion and practice, there is no essential difference between the biologic effects of roentgen rays produced at high voltage and filtered through a half to 1 millimeter of copper, and the gamma rays of radium passed through a similar filter. The skin reaction from the one is analogous to that produced by the other, whereas both differ materially from the primary skin reaction produced by the quality of roentgen rays formerly employed in therapeutic work, and both formerly and now for diagnostic purposes. Since we have something less than a gram of radium at our command, we reserve radium for internal application, substituting high voltage roentgen rays for surface applications of radium from the exterior. There are instances, however, in which we employ radium as a pack on the surface. Only in a few large, richly endowed institutions, where several grams of radium are available, can the surface applications of radium be made at a great distance from the skin with any economic advantage.

In order to stem the tide of widespread skepticism that still exists regarding the value of the roentgen ray and radium as an adjunct in the treatment of malignant disease, I believe it of first importance to procure in every possible case a biopsy specimen for pathologic study and future reference. In a comparison of operative and radiation results, one can accept only cases in which a tissue diagnosis has been made. We believe, in most instances, that the danger of removing a biopsy specimen is not great. It is well in all cases to use the electrical knife (radiotherm) both for removing the specimen and for sealing over the edges of the wound from which the specimen is taken. We believe that in this manner it is safe to take biopsy specimens in practically every accessible tumor encountered. Not only should a specimen be taken before, but also at intervals during the progress of the case. We have found this latter particularly helpful.

No space will be devoted to technical details, as these have been carefully elucidated in previous communications,[4] and there has been no occasion to alter materially the method as described. There is one point there referred to, however, which demands serious reconsideration. Shall the radiation therapy be administered over a longer period of time, with frequent or long intervals between applications, or shall it be given as an intensive therapeutic effort; and, if the latter, shall it be given in the shortest time possible so that the total irradiation in a case is administered within three or four days or less, or shall it be divided into smaller daily doses and the duration of the treatment protracted to ten or twelve days? The first named method is pernicious and should be abandoned. On all theoretical and clinical grounds, it is shown to be wanting. A definite radioresistance is developed in the diseased tissues, and, at the same time, the normal cells become increasingly sensitive, so that ultimately the treatment becomes ineffectual. The other two suggestions both really constitute intensive irradiation, in the one case given "brutally," as the French describe it, and in the other given gently, but as a protracted intensive radiation.

As an example of the method of long drawn out, interrupted, frequently repeated doses, which is to be condemned, we cite the common practice of irradiating a breast postoperatively, say once every two weeks for six months, or, as I know is frequently done, to prescribe a dose for once a week for the first two months; once every three weeks for the next two months; once every six weeks for the next two months, and then once every three months. Such "a dollar down and a dollar forever" plan of treatment by small doses frequently repeated and protracted over a long period of time is likely to result in a sort of immunity on the part of neoplastic tissue with, on the contrary, as shown by Schwarz,[5] a progressive sensitization of the normal tissues.

With the intensive method, we may give as an example of the "brutal" dosage the introduction of an erythema dose into the pelvis by combined radium and roentgen-ray therapy within from two to four days. This method involves certain disadvantages which are obviated in protracting the time during which the radiation is applied, but without greatly increasing the total dosage, as advocated by Regaud[6] and his colleagues at the Radium Institute of Paris, a method to which a large number of radiologists of this country are gradually turning.

Since August, 1923, I and my colleagues at the Battle Creek Sanitarium have been employing for deep therapy the water-cooled tube described by Coolidge and Moore.[7] This is a water-cooled high voltage roentgen-ray tube designed to deliver satisfactorily as much as 50 milliamperes at 250,000 volts. Previous to that time no more than 8 milliamperes could be obtained with 200,000 volts, and most workers employed only 5 or 6 milliamperes. We have employed 30 milliamperes as a routine. I have long believed that increased intensity was desirable in order to save time; and we have been pleased at the discovery that, in addition to a very gratifying reduction in the time of treatment (reduced to five to ten minutes instead of one to two hours), there is a marked diminution of the amount and severity of radiation sickness. Even with the increased intensity made available by this tube, we still

4. Case, J. T.: The New Short Wave Length Roentgen-Ray Therapy, J. A. M. A. 79:699 (Aug. 26) 1922; Technical and Clinical Aspects of the New Deep Roentgenotherapy, Am. J. Roentgenol. 9:530 (Sept.) 1922; The New Roentgenotherapy in Gynecology, Texas State J. Med. 18:360 (Nov.) 1922.

5. Schwarz, G.: An Apparently Constant Difference of Behavior of Benign and Malignant Growths Toward Roentgen Rays, Klin. Wchnschr. 2:969 (May 21) 1923; Am. J. Roentgenol. 10:622 (Aug.) 1923.

6. Regaud et al: Curiethérapie des cancers du col de l'uterus, Arch. d'electr. med. et de physiotherapy, September, 1923, p. 289; A propos de la durée d'application en curiethérapie et sur la valeur pratique de l'index karyokinetique, Bull. de l'Assn. franç. pour l'étude du cancer 12:482 (June) 1923. Regaud, C.: The Error of Division and Too Frequent Repetition of Doses in the Radiation Treatment of Cancer, Paris Med. 13:102 (Feb. 4) 1922.

7. Coolidge, W. D., and Moore, C. N.: Water-Cooled High-Voltage, X-Ray Tube, Am. J. Roentgenol. 10:884 (Nov.) 1923.

adhere to Regaud's plan of giving small doses (six or seven minutes) every day, but distributing the total dose over so long a period that the total time required to introduce an erythema dose into any deeply seated tumor is from eight to twelve days. The tremendous advantage afforded by shortening the time factor in the application of any dose—big or little—makes it distinctly advantageous to use the water-cooled tube for either high or low voltage applications.

DOSAGE

At one time lively hope was entertained that it would be possible to adhere to a standard "carcinoma dose," "sarcoma dose," etc. As a basis for general guidance, it is important to familiarize oneself with the work of the various leaders who have standardized these carcinoma and sarcoma doses; yet, as we are all perfectly aware, it is actually impossible to settle on a standard physical dosage which will apply to all types of tumor. It is a regrettable fact that the various types of carcinoma tissue offer great differences in susceptibility to radiation, and this alone makes it important to insist on a biopsy diagnosis in order to recognize the type of tumor under treatment. It is not enough to say that this or that case is carcinoma, and be content with the "carcinoma dose"; we must know the classification of carcinoma in order to decide as to its probable resistance or susceptibility to radiation.

LIMITATIONS

The physical limitations are obviously those governing the delivery of a sufficient amount of radiation throughout the cancerous tissues. These limitations depend primarily on the accessibility and anatomic distribution of the lesion under fire, the great variability of cancer cells in their reaction to irradiation, and the extreme sensitiveness of the surrounding normal tissues. There is an additional general sensitiveness of some patients to radiation. All cachectic persons bear radiotherapy poorly, but in addition there are some patients who tolerate it poorly even though they have not developed cachexia. As already hinted, certain biologic characteristics of the cancers limit the usefulness of the radiation method; for some tumors, even of the same morphologic characteristics as others which prove very susceptible to radiation, manifest a marked resistance. Tissues that have been subjected to previous radiation are much more resistant, and this argues for the administration of the total dose planned in any case within from ten days to a fortnight. Among other specific limitations are the following:

1. In lesions about the neck, damage to the larynx and trachea is apt to occur, and fatal accidents have been recorded as the result of necrosis of the laryngeal cartilaginous structure. Not uncommonly, a period of hoarseness lasting from a few weeks to a few months may follow treatment of a lesion in the neck, although the treatment was not followed by any appreciable skin reaction. Because of the great susceptibility of the laryngeal cartilage to radiation, this means of treatment is not likely to stand permanently as a method of choice for laryngeal cancer, either extrinsic or intrinsic. Irritation of the trachea frequently follows.

2. Tenesmus of the bladder and rectum, and diarrhea may follow the administration of a large dose to the lower abdomen and pelvis within a short time. Warthin and I[8] have noted changes in the liver indicating that general applications of radiotherapy, especially those over the abdominal area, are apt to result in serious liver damage. It is entirely probable that postirradiation roentgen-ray sickness is as much due to hepatic as to intestinal damage.

PREOPERATIVE AND POSTOPERATIVE IRRADIATION

The question of postoperative treatment is an old one, and many surgeons, openly skeptical regarding the value of radiation as a prophylactic means in connection with surgery of cancer, still continue to send their patients to the radiologists for postoperative treatment. Statistics are beginning to appear relative to the prophylactic value of such irradiation, some favorable and some unfavorable. I am convinced of the value of radiation as a postoperative prophylactic means. According to Perthes and Hütten, the end-results in carcinoma of the breast are made worse by after-treatment with the roentgen-ray. On the other hand, Anschütz and Hellmann feel satisfied that the employment of a correct dosage of postoperative radiation improves their end-results. Handley has subjected to irradiation every case of breast cancer during the last fourteen years and is distinctly partisan to this method.

In undertaking prophylactic postoperative treatment, it should be borne in mind that the operator may have failed to extirpate a portion of the microscopic growing edge of the tumor. It is to the peripheral region beyond the outposts of visible or palpable disease that the radiologist should give especial attention. A knowledge of the course along which the infection is apt to spread will enable him to treat with greater accuracy these tracts of probable disease extension.

Preoperative treatment is a topic concerning which there is considerable difference of opinion. I believe in preoperative treatment. The patient is in a better state of health to stand massive dosage than would be the case after operation. The surgeon runs less risk of spreading active cancer cells by the surgical trauma he has to carry out provided anteoperative radiation has been given. In the light of our experimental knowledge that radiotherapy will cause atrophy with partial obliteration of the lymphatic channels, coupled with a deleterious action on tumor cells, and especially in the light of the work of Murphy[9] at the Rockefeller Institute, I cannot do otherwise than accept the conclusion that every case of known malignancy should first be submitted to a thorough intensive preoperative exposure of radiation. It is our custom to give the preoperative treatment either three or four weeks before the operation or within two days of the operation. The postoperative treatment is given just as soon as the patient is out of bed, unless the preoperative dose shows an untoward reaction.

In mammary carcinoma, particularly, preoperative radiation seems to be especially valuable, as radiation causes modification in the lymph glands, inhibition of cell growth, lack of mitosis, giant cell formation, and change in characteristics of the malignant cells (Ewing).

Up to the year 1918, the time during which postoperative roentgenotherapy should be continued was generally estimated at two years; later on, the time was reduced to one year; but with the employment of modern deep therapy equipment, it is customary to give only two postoperative series, if possible, at an

8. Case, J. T., and Warthin, A. S.: The Occurrence of Hepatic Lesions in Patients Treated by Intensive Deep Roentgen Irradiation, Am. J. Roentgenol. 12:27 (July) 1924.

9. Murphy, J. B.: Experimental Studies in Roentgen-Ray Effects, Am. J. Roentgenol. 11:544 (June) 1924.

interval of from ten to twelve weeks. A third series may be administered after the proper interval only in the presence of an evident recurrence.

At this point there naturally arises the question, Does preoperative radiation render operative procedure more complicated or difficult? The reports from the clinics of von Eiselsberg, Henkel, Abel, Klein and Bumm are largely responsible for discouraging the surgical treatment of previously irradiated tumors. It is asserted that a certain degree of anemia of the abdominal walls followed radiation; but this is looked on rather favorably, as lessening hemorrhage. In only two or three published cases has it appeared to render dissection unusually difficult. In the light of our experience to date, we may state that radiation treatment preceding pelvic or breast operations does not render the latter more difficult nor technically complicate them. Wounds of the abdominal wall occasionally show interrupted healing; but microscopic examination fails to reveal any definite tissue change attributable to the rays. In twenty-five out of twenty-eight laparotomy wounds at the University Frauenklinik of Tübingen, the wounds healed perfectly. We may conclude that there is no intrinsic danger to the recovery of abdominal wounds after preceding roentgen-ray or radium treatment not exceeding the erythema dose. Nor is there any tendency for radiation injuries to appear near the scar any more than at other points. Careful statistical observations in several of the leading gynecologic clinics in Europe would indicate that roentgen-ray treatment preceding gynecologic operations, at least, has not increased direct or delayed injurious effects on the healing of surgical wounds. In operations elsewhere there are occasional records of postoperative necrosis of pedicled skin flaps, so that the conclusion is reached that in body regions previously irradiated the tissue becomes unsuited to later autoplastic operations. It seems that the tissue of previously irradiated portions of the body may develop temporary increased susceptibility, which does not become evident until necrosis is produced by some special action, such as the trauma associated with operation.

As to results, I still feel that any dogmatic statements are premature. Prior to the advent of the modern technic of deep roentgenotherapy, the radiation technic differed very materially in the various clinics, and it was not possible to make intelligent comparisons; and in relation to modern deep therapy, too little time has elapsed to permit reasonable deductions. Too few seem to comprehend the complexity of the technic of applications of radium and deep roentgen ray. To many it is simply the "turning on" of the machine, or the laying on of the tube or plaque. Many dare to use these potent agencies who are still unfamiliar with that first and basic law of radiant energy, the law of the inverse square, to say nothing of the numerous other physical principles without which accurate or safe applications are impossible. Many who are willing to learn these principles are unable to find openings for practical instruction. Tables of results have here and there been published; and some of the more recent ones, especially those of Seuffert, Opitz, Beuttner, Perthes, Hütten, Anschütz, Hellmann, Bailey and Schmitz are beginning to pile up a mass of statistics from which, within another year or two, the ultimate truth may be foreseen. It is apparent now that through the publicity given the hope aroused by the development of roentgen-ray and radium therapy and the public instruction given through various agencies, there have been coming to our clinics numbers of patients in an utterly hopeless condition who formerly did not appear; and the percentage in which there is a reasonable prospect of permanent improvement by either surgery or radiation is greatly reduced. In spite of this fact, the proportion of patients, not yet utterly hopeless and cachectic, surviving a five year period appears to be about the same for surgery or radiation, the latter method having the additional advantages of practically no mortality and a more comfortable and useful period of survival, with freedom from painful or nauseous symptoms and greatly diminished necessity of hospitalization.

We have in radiation therapy a means of influencing the cancer cell itself and its environment. Not only do we reach the superficial neoplastic tissues, but this agent is one which has the power of considerable penetration; it can cause the malignant tissue to regress or die; it has an elective action for a great many of the varieties of cancer cells. When surgery fails, it is because: 1. Recurrences or metastases develop—either the tumor has not been completely removed, or the mass having been removed clear to the border of visible or palpable disease, there remain behind invisible cell nests, or in the surgical manipulation traumatic transplantation of malignant cells has occurred. 2. Once the operation is completed and the healing complete, the rôle of the surgeon is finished and he is nearly helpless against further eventualities. 3. In advanced cases it is, on the face of things, useless to attempt more than palliative intervention.

Radiation therapy, counteracting these deficiencies in considerable measure, has a direct effect on the tumor, and most tumors have at least some degree of susceptibility to radiant energy; unlike the knife, it acts on the depth as well as the surface, exercising an elective selection for malignant cells, rendering later surgical removal safer, or restricting the area of malignant involvement so that often it is possible by later intervention to remove it surgically. Preoperative and postoperative radiation therapy offer one of the best guarantees now possible against recurrence of the disease if metastasis has not already occurred. Especially in the treatment of the clearly inoperable cases does radiation therapy offer the best means of palliation, though it is very rare, indeed, to see a five year survival if cachexia or metastasis has occurred.

Finally, we should be reminded once again that no sincere seeker after truth will wish to espouse any exclusive method of attacking cancer until we have much more proof than is now available that cancer is amenable to treatment by that exclusive method. We will employ all the various modalities of surgery, including with the knife and the cautery, these radioactive agents, the roentgen rays and radium, in the employment of which such great strides have been made within the last few years.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. EWING, WOOD, DUNHAM, JUDD, ENGMAN AND CASE*

DR. CLAUDE REGAUD, Paris, France: I disagree with Dr. Wood on some of the points made in his explanation. The method of studying cancer or methods of treatment by ingrafting or transplanting cancer has brought about a great improvement and a great deal more knowledge of implanted cancer, but very little improvement in the treatment of cancer

* This discussion, together with the papers by Drs. M. F. Engman and J. T. Case, concludes the symposium on cancer. The papers by Drs. James Ewing, P. C. Wood, J. D. Dunham and E. S. Judd were published last week. The complete symposium will be published in pamphlet form, at 40 cents a copy. A special price will be made on quantities.

itself. I wish to make two observations to show that point: the relation between a tumor transplant from one animal to another, and the relation of a spontaneous tumor to the normal tissue of a living human being or animal. The experience cited by Dr. Wood, in which the effects of massage are involved and in which the effects of biopsies were noted, is quite different, and in relation to spontaneous cancer could not be translated into corresponding effects. In experimental cancer, in transplanted cancer, the tumor is not working under the same conditions with relation to the lymph glands and vessels, whereas in the spontaneous tumor there are large vessels within the tumor and all about it. The conditions are entirely different. For that reason, it is easily understood why massage and the taking of biopsies might have considerably different effects on experimental conditions as compared with spontaneous conditions. In relation to radio sensitiveness or susceptibility of spontaneous tumor as compared with transplanted tumor: Transplanted tumors show very little sensitiveness, whereas in many spontaneous tumors there is distinct sensitiveness. It seems to speak for different types of tumors. Spontaneous tumors in human beings are much more sensitive to various agencies—radium, for instance—than transplanted tumors in mice, etc. Hence, it is difficult to draw conclusions on the effects of radium or roentgen ray on the experimental tumor as compared with the human tumor. This also applies to so-called radio immunization. The question can not be settled by the study of grafted cancer, the transplantation method. The question of immunization by irradiation is a certain fact in practice, and any radiographer may satisfy himself about it by a little work by this method. I believe that Dr. Wood's work is quite effective so far as it goes; but to transplant these experiments over into practical work or spontaneous human tumor is not easy, and we must seek some way of translating these or similar results into practice, if possible. I greatly appreciated the points brought out by Drs. Dunham and Judd, and their great importance, especially the neglect of many physicians who first see the patient, in not realizing the danger and taking proper steps. Cancer of the tongue is a case in point in France. The general practitioners in France have a great tendency to treat cancer of the tongue as a syphilitic lesion. They feel that syphilis has a great tendency to lead to cancer of the tongue. For that reason such lesions, under the guise of a therapeutic test, are kept under neo-arsphenamin and various other treatments, until at last, when the specialist sees the case, it is too late to have anything done. For that reason I feel that the general practitioner should realize that his rôle is not one of treating cancer but of referring it to some one who can treat it. There is a rule in the treatment of cancer which applies to all cancer—that is, to withhold from surgical intervention only those cases in which radium is certain to produce better results than radiotherapy. The improvement of technic must be made in inoperable cases, and it is only later, as the technic improves, that the work can be transferred to operable cases.

Dr. H. Gideon Wells, Chicago: Statistics have been quoted this afternoon as to the frequency of cancer in different organs or among different classes of population. We have been told, for example, that carcinoma of the stomach constitutes 35 per cent. of all cases of carcinoma, but how are these statistics obtained? Do they represent the percentage of cancers coming to operation at a surgical hospital, or the percentage of carcinomas found at the postmortem table, or the percentage of malignant diseases recorded in vital statistics? All such sources of information give different answers to the same question, and there are no statistics available at the present time which can tell us the relative frequency of cancer in any given tissue. Necropsy statistics are entirely unreliable, because they represent a selected group of cases. Only a small proportion of all patients dying in most hospitals come to necropsy, and the cases which offer the greatest difficulty for diagnosis are the ones in which the interns are most liable to secure necropsy permission, whereas few cancers of the external parts of the body come to the necropsy table, for there is no question of the correctness of the diagnosis. Consequently, we find that most of the malignancies in necropsy records are cancers of internal organs, and in many sets of necropsy statistics over 50 per cent. of all malignant cancers are of the alimentary canal, whereas cancer of the skin, mouth or breast appears rarely. On the other hand, if our statistics are derived from the cancer hospitals where people go for relief by operation, roentgen ray or radium, the cases are predominant of the skin and other accessible portions of the body, whereas few carcinomas of the internal organs are recorded in such statistics. Vital statistics present the error of being fairly accurate as to cancer visible externally, with probably nearly a 50 per cent. error of omission or commission, in cancers of the internal organs; for even the records of the best large hospitals show about that percentage of error when clinical and necropsy diagnoses are combined. Again, we are told that cancer is a disease which is increasing in frequency, and that it is essentially a disease of civilization, being most frequent in the communities that are what we are pleased to call most highly civilized, and less frequent among primitive people. While these facts are undoubtedly true, their significance is commonly misinterpreted. Cancer necessarily is a disease of civilization, and the more our methods of public health, care of the sick, diagnosis and recording of vital statistics are improved, the higher the cancer death rate must become, for the simple reason that cancer is chiefly a disease of the old, and when in the internal organs, a disease not readily recognized. Under natural conditions few animals reach cancer age, and the same is true of primitive man. For example, in India the average expectation of life in males is only 26.6 years, whereas in the United States it is 54 years. Obviously, relatively few inhabitants of India reach cancer age. Furthermore, in primitive countries few of the cancer patients will be seen by physicians. Most of the patients coming under observation by foreign physicians are the young persons, since the older, more conservatvie natives shun the foreigner—they stay back in the hills. Proof of this is the fact that most cancer statistics from primitive countries show sarcoma, the malignant tumor of the young, to be even more frequent than carcinoma, whereas with us the carcinomas are from seven to ten times are abundant as sarcomas. It will generally be found in many sets of vital statistics that, paralleling the increase in deaths from cancer is a rise in the deaths from cerebral hemorrhage, chronic interstitial nephritis, organic heart disease and pneumonia, all of which are essentially diseases of advanced years. We are told that cancer is less common among vegetarians, but here we get the fallacy that the vegetarian peoples are usually those living in communities where there is a very high early death rate, few persons surviving to reach the cancer age, and where there are few physicians and virtually no vital statistics worthy of the name. If cancer were the result of meat eating, what would become of the Eskimo? It will be found that the increase in cancer death rate is also to a large extent accounted for by improved vital statistics. If we take all these facts, we find that together they are adequate to account for all the observed increase of cancer described by various statisticians. Until we can have, for a period of years, vital statistics from a community in which every person who dies is submitted to complete postmortem examination, we can know little about statistics of cancer.

Dr. Dean Lewis, Chicago: The cure of malignancy depends on its early recognition. In the gastro-intestinal tract time is often lost in an endeavor, probably praiseworthy, to make an exact diagnosis. Early exploratory operation is needed in probable cases of malignancy and attempts to make a positive diagnosis should be discarded, especially when the diagnosis is based on the reaction of the lesion to certain therapeutic measures. Carcinomas of the stomach should be operated for much earlier than they are, and the operability should be much higher. Some more certain index of malignancy is desirable. Clinically it is frequently impossible to determine by the clinical history or behavior the degree of malignancy of a breast tumor, for example. A small carcinoma which one would think might have a favorable prognosis following a radical operation is followed by bone metastases in a few months, while a large carcinoma with lymphedema of the skin and involvement of axillary lymph nodes may not recur for years. The degree of malignancy is probably

determined more accurately by histologic findings than by clinical history. Degrees of malignancy are exhibited by different types of tumors. This is illustrated in certain tumors of the vertebra, so-called giant cell tumors, which rarely, if ever, form metastases and some of which have ceased to grow spontaneously. The clinical course of these tumors is so benign as to raise the question as to whether they may not be reparative processes going on to the formation of excessive amounts of tissue. I have had an unfortunate experience with the roentgen ray in the treatment of carcinoma of the breast. It has seemed to me that the patients that have been irradiated have done badly. Undoubtedly, carcinoma cells are left behind even when the most radical operation is performed. If the roentgen ray does not kill these cells, they may be stimulated to a continued and excessive growth. I am waiting for statistics regarding patients that have been irradiated and those that have not been. Even when such have been published it will be difficult to determine the efficacy of the roentgen ray because, as stated in the beginning, of the difficulty of determining the relative malignancy of these different groups.

DR. FRANK SMITHIES, Chicago: I have been impressed greatly by the fact that in this discussion, practically all the material that has been presented bears on cancer in the individual, paying little or no attention to the great question of cancer as it affects the human family. The question cannot be discussed adequately without consideration of the dual rôle played by cancer, namely, its influence on the whole human family and its influence on the unfortunate person who is affected with the disease. In our series of 921 proved cases of cancer of the stomach, the hereditary incidence of these cancers was just under 9 per cent., as was shown by searching out the occurrence of family cancer back to four generations within the time that patients came under observation. Furthermore, homologous cancers were demonstrated in approximately 5 per cent. of the patients who showed cancer heredity. This is a figure strikingly similar to that mentioned by Miss Slye with regard to homologous, spontaneously arising cancers in mice paired according to mendelian laws. If marriages could be regulated for four generations by having the marriageable population registered and controlled, there is sufficient experimental evidence at hand to indicate that cancer might eventually be eliminated from the human race. But so long as there are susceptible human temperaments, moonlight and Ford cars, it is almost hopeless to think that cancer will ever be eliminated in accordance with mendelian laws. Nevertheless, I think it is a great injustice to the work that Maud Slye has carried out in her study of genetics of cancer that cancer propaganda pamphlets almost invariably begin with the statement that there is no evidence that cancer is hereditary. With respect to the significance of cancer in the individual, in contradistinction to its incidence in the race, sufficient facts have been presented by experimenters and by the speakers this afternoon to convince us that once there is the "taint" toward cancer in the family and the individual, chronic irritation is a factor in localizing growths and insuring their rapid progression. Many of these facts have been brought out by previous discussants; I merely wish to emphasize that chronic irritation does not necessarily mean purely mechanical irritation. Chronic irritants may be mechanical, but quite frequently they are thermal, chemical, bacterial or parasitic. This has not been sufficiently appreciated in consideration of chronic irritation, particularly with regard to cancer in the alimentary canal. We have had under observation, for periods varying from five to twelve years, seven patients who came for the relief of ulcerative colitis in association with intestinal protozoa. Until within about nine to ten months of the death of these patients, the lesions were benign. However, parasites intermittently recurred in the intestinal canals of these patients, and always with the recurrence of the parasites there was a lighting up of the ulcerated condition. The patients all developed cancer of the colon and all died from cancer of the colon. Two had cancer of the sigmoid and rectum; three, cancer of the splenic flexure; one, cancer of the transverse colon, and one, cancer of the cecum and ascending colon. It would seem apparent, therefore, that bacterial, protozoal and chemical agents must frequently be regarded as chronic irritants, and if such irritation occurs in individuals who would, according to Miss Slye's classification, have cancer heredity, it is highly desirable that more than ordinary effort should be put forth to free their alimentary tracts from organisms, before simple, benign processes have had the opportunity to assume malignant aspects.

DR. W. C. MACCARTY, Rochester, Minn.: From a practical standpoint, we must learn that there are several different kinds of diagnoses associated in the problem of cancer. The first, of course, is the patient. The American Society for Cancer Control is doing a great deal for the education of the patient. The fact is being demonstrated in hospital routine and by our observation that cancerous lesions are coming to us daily as smaller lesions than fifteen or eighteen years ago. We have fooled ourselves about our diagnostic efficiency. I know that 17 per cent. of all breast lesions could have been diganosed by any clinician. I know that 22 per cent. of cases of cancer of the stomach are discovered in the laboratory, not in the operating room or by the clinician. Thirty-six per cent. of pelvic conditions come to the operator without a positive diagnosis. That means that clinicians are honest enough with themselves and the patient to realize their own diagnostic limitations. Exploration must be considered as a diagnostic method. We cannot base our clinical pathologic opinion on necropsy material. The morbid anatomist today who expects to render efficient clinical service must associate with the physician and the surgeon.

If I had a chronic gastric ulcer, I would lose no time in having some good surgeon resect that ulcer. I know from experience that cancer of the stomach is frequently associated with gastric ulcer, and I myself would take no chances.

DR. MAUD SLYE, Chicago: All the facts of science must be harmonious, and when through many years of research we have found certain indisputable pathologic facts, we must try to apply them so that, if possible, they can be correlated. The whole question of genetics is an extremely difficult study. The audiences of young people whom I address on the subject of genetics are very receptive. I believe in making the facts of genetics more common property, particularly among the young.

DR. FRANCIS CARTER WOOD, New York: I think that, perhaps, Professor Regaud's interpreter has given my audience the impression that we differ widely on many of the points that I brought forward. On the contrary, Professor Regaud and I agree on almost all this experimental work. It will be remembered that in the beginning I said that these transplanted tumors were in no sense exactly the same as spontaneous tumors. But they are all originally derived from spontaneous tumors, and, in general, correspond with metastases from spontaneous tumors, but growing in another host. The great advantage in the use of transplanted tumors is that they are more homogeneous in their biologic qualities than any series of spontaneous tumors could be; and they hold these properties for years through many generations of transplantation. They are to the student of cancer what the culture tube and rabbit and guinea-pig are to the student of bacteriology. Because a guinea-pig with tuberculosis or a pure culture of the organism is not the same as tuberculosis in the human being is no reason for rejecting all we have learned concerning tubercle bacilli and tuberculosis by the use of these two methods of study—pure cultures and animal inoculation. In the massage experiments cited, I was able to do in a few weeks what was impossible to accomplish in human beings or with primary mouse or rat tumors. In other words, I was able to obtain by inoculation 400 exactly similar tumors. No laboratory could furnish 400 primary tumors in animals, and no one would be willing to massage 200 primary tumors in human beings and keep 200 more as controls. I could kill all my animals at the end of a given period, examine them and study the situation. We have not yet reached that high scientific plane with human beings. What I tried to show in my paper is that we have in the transplantable tumor a means of studying the biology of a cancer cell, free from many of the factors that complicate the situation when we study human beings or use primary tumors in animals. There are many

problems that can be solved by the use of these transplantable tumors but can be attacked successfully in no other manner. The cancer question is big enough to need every atom of information we can obtain, no matter from what source, so long as we retain our critical faculties and do not draw inaccurate conclusions.

A STUDY OF PROTEIN ABSORPTION FROM THE DIGESTIVE TRACT BY THE PRECIPITIN TEST

WITH ESPECIAL REFERENCE TO THYROGLOBULIN *

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The experiments, the results of which we now report briefly, were made in the course of studies of the precipitin reaction of the digestive mucosa,[1] in order to learn, if possible, whether certain antigenic substances, taken into the stomach under special conditions, can be traced into the blood by means of the precipitin test.

In all the experiments, apparently healthy dogs were used. All food was withheld for two or three days, and in our first series the dogs then were fed raw beef, 500 gm. each, and killed by bleeding under anesthesia in from half an hour to three hours later. Thorough perfusion with salt solution was done at once, and extracts of the digestive mucosa in salt solution prepared as described elsewhere.[1] The extracts, filtered clear, and the serum of the portal and systemic blood, were tested with antiserums for the antigen peculiar to the digestive mucosa and for beef proteins. For the latter purpose, a strong precipitin serum for beef serum was used.

The results of nine experiments, which are illustrated in Table 1, are briefly the following: 1. Positive reaction for the antigen of the digestive mucosa were obtained with nearly all the extracts, but in no case with the blood serum. 2. In no case were beef proteins detected definitely in extracts of mucosa, blood serum or urine.

In the course of the tests for beef protein, we learned that the precipitin serums for beef serum that we used reacted with dog serum in general in dilutions of 1:40

TABLE 1.—*Precipitin Tests of Extracts and Serum of Dogs After Eating 500 Gm. of Fresh Beef Muscle*

Antigens	Serums of Rabbits Injected with Extracts of Gastric, Ileac and Colonic Mucosa	Serum of Rabbit Injected with Beef Serum
Extract of gastric mucosa	+	0
Extract of ileac mucosa	+	0
Extract of colonic mucosa	+	0
Portal serum	0	+
Systemic serum	0	+
Normal dog serum; control	0	+

up to 1:60 or 1:80 and occasionally even higher. It is intended to make a closer study of this reaction; of course it is possible that, on account of it, small amounts of beef protein absorbed from the digestive tube were not detected.

In the second series of experiments, the procedure was the same as in the first series, except that the dogs were fed first chopped beef thyroids in place of beef muscles, and that tests also were made with precipitin serum for beef thyroglobulin.[2] In the last three of the seven dogs in this series, extracts of the digestive mucosa were not made. The results of the tests of the blood serum with the antithyroglobulin serum are given in Table 2. No reaction for beef thyroglobulin was obtained with extracts of the digestive mucosa in the four instances in which they were made. The results of all the other tests were quite the same as in the first series, and the details are omitted.

TABLE 2.—*Tests of Blood Serum for Beef Thyroglobulin in Dogs Fed Chopped Fresh Beef Thyroids* *

	Antigens	Precipitin Serum for Beef Thyroglobulin	
Dogs 1 and 2.	Portal serum	0	
	Systemic serum	0	
	Urine	0	
Dog 3.	Portal serum	32	
	Systemic serum	0	Killed two hours after eating 250 gm. of beef thyroids
	Urine	0	
Dog 4.	Portal serum	40	
	Systemic serum	10	
	Urine	2	
Dog 5.	Portal serum	8	
	Systemic serum	2	Killed 35 minutes after eating 500 gm. of beef thyroids
	Urine	0	
Dog 6.	Portal serum	0	Serum collected one, two and three hours after eating a small quantity of beef thyroids
	Systemic serum	0	
	Urine	0	
Dog 7.	Portal serum	8	25 minutes
	Portal serum	16	90 minutes
	Portal serum	8	150 minutes
	Systemic serum	16	25 minutes After eating 500 gm.
	Systemic serum	4	90 minutes of beef thyroids
	Systemic serum	4	150 minutes
	Systemic serum	4	240 minutes
	Urine	0	25, 90, 150 minutes
Normal dog serum		0	
Beef serum		0	
Beef thyroglobulin		10,000	

* The figure give the highest dilutions of the antigens in which positive reactions developed after one hour at room temperature. 0, no reaction. All tests made by contact or layer method with progressive dilutions of antigen.

SUMMARY

Beef proteins were not detected by the precipitin test in extracts of the digestive mucosa, or in the portal and systemic serum, during the digestive period after feeding fasting dogs fresh beef muscle. It is possible that small amounts of beef proteins may have escaped detection because of an unexpected reaction of normal dog serum with beef serum precipitins. Beef thyroglobulin, on the other hand, may appear in the portal serum, the systemic serum, and occasionally also in the urine, during the digestive period after feeding fasting dogs fresh beef thyroids. The greater concentration of the thyroglobulin in the portal serum, and its apparent absence in extracts of the digestive mucosa, point to its direct absorption into the tributaries of the portal system. That beef thyroglobulin may pass into the blood from the digestive tract, without the loss of its antigenic properties, is in harmony with the well known fact that the active principle of the thyroid can withstand gastro-intestinal digestion and enter the blood in active form. The results of these experiments appear to warrant further studies by similar methods of the absorption of proteins from the digestive tract under various conditions.

* From the John McCormick Institute for Infectious Diseases and the Division of Physiology and Pharmacology of Northwestern University Medical School.

1. Hektoen, Ludvig; and Schulhof, Kamil: Precipitin Reaction of Digestive Mucosa of Dog, J. A. M. A. 83:1300 (Oct. 25) 1924.

2. Hektoen, Ludvig; and Schulhof, Kamil: The Precipitin Reaction of Thyroglobulin, J. A. M. A. 80:386-387 (Feb. 10) 1923. Hektoen, Ludvig; Carlson, A. J., and Schulhof, Kamil: The Precipitin Reaction of Thyroglobulin, J. A. M. A. 81:86-89 (July 14) 1923.

Special Article

REPORT OF THE COMMITTEE ON LOCAL ANESTHESIA IN OPHTHALMIC WORK *

To the Members of the Section on Ophthalmology of the American Medical Association:

Four years ago, at the request of the Council on Pharmacy and Chemistry of the American Medical Association, this committee, representing the section, made a clinical investigation of the advantages and disadvantages of the various agents used for producing local anesthesia in ophthalmic work, and at the Boston session, June, 1921, the committee made its report, devoting most attention to anesthesia produced by topical applications.

Following the presentation of the report, the section voted that the committee be continued for the purpose of making a study of the advantages and disadvantages of infiltration anesthesia in ophthalmic work, with the possibility in view of recommending a more general employment of such form of anesthesia. In accordance with those instructions, the committee now makes the following report:

THE QUESTIONNAIRE

For the purpose of assisting in arriving at more definite conclusions a questionannaire covering the subject of infiltration anesthesia was sent to the members of the section, asking for reports covering experiences and individual opinions as to the value of infiltration anesthesia in certain operative procedures. The questionnaire was as follows:

1. Do you use infiltration anesthesia to any great extent in ophthalmic work? If so, how extensively?
2. What anesthetic do you use and in what strength is it employed in infiltration anesthesia?
3. Do you add epinephrin? If so, what strength?
4. In what type of operations do you find infiltration anesthesia particularly useful?
5. Have you found infiltration anesthesia quite sufficient for enucleation? (*a*) Kind, strength and amount of anesthetic used. (*b*) Briefly, the technic of its employment. (*c*) Length of time necessary to wait before beginning to operate. (*d*) Contraindications.
6. Do you find that infiltration anesthesia is satisfactory for the advancement of ocular muscles? (*a*) Kind, strength and amount of anesthetic used. (*b*) Briefly, the technic of its employment. (*c*) Length of time necessary to wait before beginning to operate. (*d*) Contraindications.
7. Do you employ infiltration anesthesia as an adjunct in operations requiring opening of the eyeball? (*a*) Kind, strength and amount of anesthetic used. (*b*) Briefly, the technic of its employment. (*c*) Length of time necessary to wait before beginning to operate. (*d*) Contraindications.
8. Do you employ infiltration anesthesia for operations on the eyelids? (*a*) Kind, strength and amount of anesthetic used. (*b*) Briefly, the technic of its employment. (*c*) Length of time necessary to wait before beginning to operate. (*d*) Contraindications.
9. Have you ever noted any bad results which you thought could be attributed to infiltration anesthesia, and if so, the nature of such results?
10. Do you think the addition of epinephrin increases the effect?
11. How do you sterilize the anesthetic?
12. Why do you prefer infiltration to general anesthesia, or vice versa?
13. Have you ever seen any toxic effects? If so, from what anesthetic, where used, and how much?

The committee desires to thank those members of the section who assisted in this study, and is gratified to know that for the most part the questionnaire was answered by men having large clinical experience and whose opinions, therefore, are worthy of serious consideration. However, the answers presented such diverging or conflicting views as to justify the belief that there is much need of education among ophthalmologists concerning all forms of local anesthesia, but particularly concerning infiltration anesthesia and its rational use.

Notwithstanding its many advantages in many cases, it is surprising to learn through the answers to the questionnaire that nearly a hundred ophthalmologists of considerable experience never have used infiltration anesthesia at all, even in chalazion operations, or to such a limited extent as to be considered negligible. Of more than 300 who use it, only about 200 use it to any extent, and among the latter only a limited number use it extensively in a variety of conditions. It is observed that for the most part those who are most opposed to infiltration anesthesia, or at least say that they can see no advantages in it, are those who use it least, and, judging from the description of technic employed in obtaining anesthesia from infiltration, there are ample reasons for the objections presented.

The Anesthetic Preferred and Strength.—The question as to the anesthetic used and in what strength employed resulted as follows: Procain, 211; cocain, seventy-seven; butyn, sixteen; Waite's solution, five; apothesin, three; and a few use holocain or less well known anesthetics.

Those using procain employed it in strengths of from 0.1 to 5 per cent., with a majority, or 126, preferring 1 per cent., and seventy-three preferring 2 per cent.

Those using cocain employ it in solutions of from 0.25 up to 10 per cent. The largest number use cocain in 1 per cent. solution, though an almost equal number prefer it in 4 per cent., while several expressed a preference for 5 per cent., and two stated that they used 10 per cent. by injection in nearly all ophthalmic operations.

Sixteen of those who answered the questionnaire use butyn for infiltration anesthesia, ten of that number preferring from 0.5 to 1 per cent., and the remainder about equally divided between 2 and 5 per cent.

Waite's solution, composed mostly of 2 per cent. procain but with other ingredients to intensify the anesthesia, is used by five of those answering the questionnaire, which includes two well known clinics.

Those using apothesin, holocain and one or two other less known anesthetics were so few as to be negligible.

Use of Epinephrin.—The question as to whether epinephrin is added or not, and in what strength, was answered in the affirmative by 191. Twenty-nine members do not use epinephrin at all, and a few answered that sometimes they added epinephrin and sometimes not.

The only uniformity as to strength appeared in the answers of more than 100 men who say that they add from two to five drops of a 1:1,000 solution to the amount of the anesthetic used, though a considerable number admit using the prepared ampules of well known manufacturers containing epinephrin in connection with the anesthetic.

Usefulness of Infiltration Anesthesia.—The question, "In what type of operations do you find infiltration anesthesia particularly useful?" brought out such a large variety of answers that it was difficult to analyze them. A large majority who look with any favor on infiltration anesthesia consider it most useful in chalazion operations, though nineteen men say that they employ infiltration anesthesia either alone or in connection with anesthesia produced by topical applications in practically every one of their ophthalmic operations.

Enucleation.—To the question, "Have you found infiltration anesthesia quite sufficient for enucleations?" eighty-nine reported "Yes," fifteen that it is uncertain, and 118 reported "No," while nearly 200 admitted never having tried it.

It is worthy of note that many of those who answered "No" employed the anesthetic in small quantities and weak solutions. For instance, one man injected 2 c.c. of a 0.1 per cent. solution of cocain, and said that his patient suffered extremely, and he got no better results from 0.25 per cent. procain.

A large majority of the operators prefer procain in from 1 to 2 per cent. solutions, though a few prefer the same drug in from 4 to 6 per cent. solution, and a considerable number use cocain in strengths of from 0.25 per cent. up to 10 per cent. solutions. Those using cocain in 10 per cent. solution do not mention the amount used, but it is presumed that only a limited amount has been used or otherwise there would have been fatalities.

A limited number of operators use holocain, butyn, apothesin, Waite's solution and some less well known anesthetics.

* Read before the Section on Ophthalmology at the Seventy-Fifth Annual Session of the American Medical Association, Chicago, June, 1924.

Concerning the technic of its employment in enucleations, there is a rather general adherence to the plan of injecting the anesthetic deep into the orbit behind the eyeball, and using from 1 to 4 c.c. of the solution, depending on the strength. It is worthy of mention that those using the weaker solutions inject larger quantities, whereas an average would be 2 c.c. of a 2 per cent. solution of procain.

The length of time necessary to wait before beginning enucleation varied greatly with different operators. Thus, following the injection, eight begin to operate immediately, twenty-three within from five to ten minutes, twenty within from ten to twenty minutes, sixteen within from twenty to thirty minutes, and four wait from an hour to an hour and one-half before beginning to operate. Again, it is notable that those who apparently are most favorable to enucleation by infiltration anesthesia wait at least ten minutes before beginning to operate, and for the most part they use the stronger solution and in relatively large quantities.

Concerning contraindications, there were thirty-two who found no contraindications, though nearly all of the rest of the replies indicated that, for young children and patients that are extremely nervous, infiltration anesthesia for enucleation is not preferred. There also were a considerable number who gave infection or acutely inflamed eyes as a contraindication. A few mentioned malignancy, old age, diabetes, hysteria, heart disease, edema of the orbital tissues, ruptured globes, and an extremely sensitive globe from iridocyclitis as contraindications.

Advancement Operations.—As to the value of infiltration anesthesia in advancement of ocular muscles, 140 men replied that they found it entirely satisfactory, and twenty-nine are opposed to it and prefer general anesthesia. A far greater number have not tried it, preferring general anesthesia, and seventeen men stated that they considered anesthesia by topical applications as quite sufficient for advancement operations.

Eighty-four of those favoring infiltration anesthesia and using it generally use procain, and of these a large majority use it in 2 per cent. solution and the others in solutions of from 0.5 up to 5 per cent.

Forty-eight men use cocain, and here there is a wide variation as to the strength of the solution used, from the two who use 0.1 per cent. solution up to the three who use a 10 per cent. solution.

Butyn, apothesin, Waite's solution, holocain and one or two other less well known local anesthetics are each employed by a few of the men.

As in the case of enucleation operations, there is a considerable difference in the opinions as to the time to wait before beginning to operate. Ten men begin immediately after the injection. Seventy begin ten minutes after the injection, and the others vary from ten minutes to ninety minutes.

Fifty men find no contraindications, while ninety-five believe that young children and very nervous persons offer a contraindication. More than fifty of these mention edema caused by the injection as objectionable. A few give inflamed eyes, idiosyncrasy, hysteria, functional heart troubles and diabetes as contraindications.

The technic of employing infiltration anesthesia in the advancement of ocular muscles is similar among all those who use it extensively, and consists of deep injections along the sheaths of the tendons of the muscles to be operated on.

Operations for Opening Eyeball.—To the question concerning the employment of infiltration as an adjunct in cases requiring the opening of the eyeball, 131 men responded in the affirmative and sixty-two expressed themselves as opposed to the practice, while more than a hundred men either admitted that they had not tried the practice or at least not sufficiently to express an opinion one way or the other, being satisfied with results from topical applications or general anesthesia.

Among those who follow the practice, sixty-six use procain in varying strengths, fifty-seven use cocain in varying strengths and the remainder use apothesin, holocain, butyn, Waite's solution and other less well known anesthetics.

Concerning the strength of the solutions used, it is noteworthy that in nearly all instances each operator uses the same strength of solution for all his infiltration work, no matter what it may be. He also follows the same general rule regarding the length of time that he waits before beginning operating, and he offers the same contraindications in practically every instance.

Many of the most prominent men in the profession, and especially those with large clinical experience, favor deep retrobulbar injections in addition to topical anesthesia in performing cataract, glaucoma and other operations requiring the opening of the eyeball. The technic is similar in the majority of instances, and consists in injecting the anesthetic well beneath the eyeball, and especially inferiorly, with the idea of reaching the ciliary ganglion.

Fifty-six operators found no contraindications to this form of anesthesia as an adjunct except in very young children, though among those who otherwise favor the procedure there were eight who considered glaucoma a contraindication and fourteen who objected to infiltration anesthesia because of the edema produced. Concerning the latter point, five operators state that objectionable edema may be avoided or overcome by using stronger solutions of the anesthetic and in correspondingly less amounts, and gentle massage to insure greater infiltration.

Operations on the Eyelids.—The answers to the questionnaire indicate that infiltration anesthesia for operation on the eyelids has 259 advocates. Twenty operators are opposed to it, and about 100 have not used it at all, or at least not sufficiently to pass judgment.

As in other conditions, the operators vary in the kind, strength and amount of anesthetic used, as also the length of time necessary to wait before beginning to operate. The majority of the men prefer procain, and of that number the majority prefer 2 per cent. solution. The cocain advocates number fifty-eight, the majority of whom prefer 1 per cent. solution, though quite a number of the operators show a preference for 4 per cent. solution, and four men have the courage to use a 10 per cent. solution.

A majority of the men wait from five to ten minutes before beginning the operation, though twenty-four operators begin immediately after the injection. On the other hand, eight men wait from twenty minutes to an hour before beginning the operative work. Practically all use topical applications to supplement the infiltration anesthesia.

The technic of employment consists in injections throughout the entire area to be operated on, and many of the operators specifically mention the necessity of using a strong solution and in limited quantity in order to secure anesthesia without producing an objectionable edema, which disturbs relationship of the tissues.

Sixty-four men reported that they found no contraindications. All of the other operators find varying objections, including inapplicability to children, edema and distortion of parts by the injection, plastic operations, pus cases, extremely nervous individuals, and patients with functional heart disease.

Bad Results.—Concerning bad results that could be attributed to infiltration anesthesia, 211 have seen none, whereas twenty-five reported varying bad results, including sloughing, disturbing anatomic reactions from the edema produced by the injection, and toxic effects.

Effect of Epinephrin.—Two hundred and thirty-five men consider that epinephrin increases the effect of the anesthesia, whereas thirty-one do not so consider it. Nearly all of the others admit that they do not know or that they add epinephrin for its ischemic effects.

Twenty-eight men consider that the epinephrin adds to the toxic effects, and of those several are of the opinion that the anesthetic often is blamed for toxic effects that were produced by the epinephrin used with the anesthetic. They especially emphasize the advisability of using epinephrin in very weak solutions.

Sterilization.—Concerning the question of sterilization practically all follow the practice of boiling the solution or at least having it come to the boiling point. Some use sterile solutions in ampules purchased from manufacturers.

Preference for Infiltration Anesthesia.—A large number of the operators give numerous reasons for preferring infiltration

anesthesia to general anesthesia, among which may be mentioned: cooperation of the patient; safer, no hospitalization; saving of time; no anesthetist required; no nausea; cheaper; shorter convalescence. On the other hand, forty-six men prefer general anesthesia when topical applications do not produce sufficient anesthesia, and give as their reasons that the patient is quieter, the patient goes to the operation with a better mental attitude, the tissues are not disturbed, and the operation is safer.

Toxic Effects.—Concerning the question of toxic effects, 160 operators reported that they had observed none, whereas fifty-seven had seen toxic effects in many instances, sometimes alarming, from cocain. One operator reports a death from 1 c.c. of 1 per cent. cocain solution injected into the region of the ciliary ganglion, and another reports a death from the injection of 2 c.c. of cocain in a sac operation. Five operators report toxic effects from procain, and one of them had a death from 2 per cent. procain injected in a sac operation. Four men have had toxic effects from butyn, and one of them reports toxic effects from topical applications of 2 per cent. butyn.

Unfortunately, only a few of those who answered this question gave the strength of solution and the quantity used that produced the toxic effects, or whether epinephrin was included in the solution and in what strength. While it is perhaps possible that among so many operators and in such a large number of operations there occasionally would occur a case of idiosyncrasy, it must be remembered that the anesthetic usually is combined with epinephrin, and the anesthetic alone may not be responsible for the toxic symptoms, as not a few operators have been deluded into thinking that epinephrin possesses no toxic action, whereas it does give alarming symptoms unless used with discretion. In fact, the practice of some operators in keeeping the operative field in sac, muscle and some other operations bathed in a 1:1,000 epinephrin solution is not without danger. Likewise, the man who injects cocain, especially in the stronger solutions, is courting tragedy.

GENERAL CONSIDERATIONS

In considering the question of infiltration anesthesia, your committee has had in mind the injection of anesthetics by means of which it is possible to control pain temporarily or during the relatively short time required for the ordinary ophthalmic operation. Nerve block in the strictest sense is not practicable for ophthalmic work, and therefore local anesthesia by the injection method is best realized by injecting an anesthetic solution in the immediate vicinity of the nerves supplying the operative field. Infiltration anesthesia, therefore, is a form of terminal anesthesia brought about by saturating the tissues with anesthetic solutions. By the use of suitable drugs, the nerve filaments lying in the infiltrated tissues become functionless. The action of the anesthetic is always due to its contact with the sensory nerve filaments and to the pressure edema, as shown by the fact that salt solution, injected in the same manner and amount, will produce some anesthesia.

Infiltration anesthesia, together with what is termed nerve block, has had a wonderful development during the last ten or fifteen years, and in general surgical procedures has a wide application and is extensively used. In ophthalmologic work it has not received the attention it deserves, probably because in many of the ophthalmic operations surgical anesthesia of the eyeball and appendages is secured by topical applications, and for all those cases that are difficult to anesthetize by topical application, or in which any form of local anesthesia seems to be insufficient or contraindicated, the operator prefers to resort to general anesthesia. However, it must be admitted that there are many disadvantages, together with some danger, connected with general anesthesia as applied to ophthalmic operations, and it would seem highly desirable to do away with general anesthesia in many of our ophthalmic operations if, by so doing, we can do equal justice to the patient and ourselves in the performance of operative work. Our foreign confrères have shown especial favor to infiltration anesthesia in ophthalmic work, and many of the prominent European ophthalmologists of wide clinical experience are employing infiltration anesthesia in practically all kinds of ophthalmic surgical work, even in children, and with eminently satisfactory results, as many of you who have witnessed the work can testify. There is no good reason why the American ophthalmologists, resourceful and skilful as they are, should not be abreast of the times and on a par with their European confrères in the adoption and practice of methods that mark new steps in progressiveness.

The response to the questionnaire which forms the basis for some of the conclusions given in this report indicate that altogether too large a number of prominent ophthalmologists, not a few with large clinical experience, are too self-satisfied with long used methods, and have not even tried infiltration anesthesia, which marks a distinct step in advance, while many others have tried out the method in a half-hearted way and apparently without giving due thought to the technic necessary in order to secure the highest degree of success.

The greatest uniformity in the practice of infiltration anesthesia by the members of this section who answered the questionnaire can be found in the work of those who are eminently satisfied with the results obtained by infiltration anesthesia. Most of those who have failed owe their failure to faulty technic, and this seems inexcusable when we take into consideration the fact that at the present time there are several comprehensive works on the subject, giving detailed and trustworthy information as to how infiltration anesthesia as it pertains to the eye may be made most effective and satisfactory, and these textbooks are supplemented by a large number of monographs, especially those presented by foreign confrères, in which the subject is discussed in detail and with particular reference to ophthalmic surgery.

In view of the variation among the answers to the questionnaire that the committee sent out, the relatively limited number using infiltration anesthesia and the delay in the general acknowledgment of the great value of infiltration anesthesia in ophthalmic practice, your committee has deemed it pertinent to discuss briefly some of the cardinal features of infiltration anesthesia, and offer recommendations based on an analysis of the results reported by those who have answered the questionnaire, and the conclusions drawn from a survey of the more important literature on the subject.

Psychic Phase.—It must be admitted that certain patients become nervous and disturbed when thinking about operative procedures of any kind, and this is especially true concerning eye operations. It is this psychic element in patients which leads many operators to select general anesthesia for all enucleations, advancement operations, and some lid operations, and they overlook entirely the fact that oftentimes the patient is as much afraid of the ether as he is of the operation.

To secure a comfortable mental attitude for the patient, all that is necessary is to resort to a hypodermic injection of morphin, ¼ grain, and scopolamin, 1/100 grain, at least an hour before the operation. This, as has been pointed out by Labat,[1] as well as others, is sufficient to dull the mentality of the apprehensive patient without reducing to any great extent his consciousness, which should be present for active cooperation. It also serves to reduce to a minimum the general sensibility to pain. In the weak doses mentioned, neither "twilight sleep" nor a semiwaking condition is produced, but the patient is in a pleasant and obedient mood.

Another element that has much to do with the apprehension of the patient is the mental attitude and conduct of the operator and nurses. A spirit of optimism and expressed assurance of the absence of pain during the operation usually inspires confidence and with it the docility of the patient, so much needed in ophthalmic operative work. During the operation, the patient should not be reminded of pain or discomfort by having it referred to by the operator or nurses. The gentleness with which preoperative examination and attention is given has much to do with bringing confidence and assurance to the patient in accepting operative attention under local anesthesia.

The Anesthetic.—The choice of the anesthetic is important, as pertains to the success of the anesthesia as well as to safety from toxic disturbances.

1. Labat: Regional Anesthesia, 1923.

It is well known that toxic symptoms from cocain are common, even following topical applications of what ordinarily are considered safe solutions, and very much more common when the drug is injected. Notwithstanding the fact that some of the prominent members of this section are using and recommend cocain for infiltration anesthesia, we are disposed to condemn the practice and to sustain the opinion of Labat and others that "cocain solutions should never be used in infiltration anesthesia. Combinations of cocain and procain are dangerous. Procain solutions are the safest, but even they are toxic in rare instances."

Procain.—It has well been said that procain is beyond the experimental stages and should be preferred to any other drug for infiltration anesthesia because it fulfils the conditions of the best anesthetic agent hitherto known. It is the anesthetic of choice, as stated by Labat and other authorities, for the following among other reasons:

1. It is from one sixth to one tenth as toxic as cocain.
2. Its toxicity is negligible when it is used in weak solutions and in such doses as are sufficient to produce surgical anesthesia.
3. It is nonirritating to the tissues and is absorbed locally, very rapidly and completely, leaving no trace of its passage at the site of injection.
4. It is not decomposed by the addition of epinephrin.
5. The addition of epinephrin hastens and intensifies the action of the drug and lengthens the duration of anesthesia.
6. It can be sterilized by boiling.

Strength of Solutions.—The strength of the procain solution to be used depends in a measure on the character of the operation and the extent of the area to be anesthetized. For minor operations, a 0.5 or 1 per cent. solution is sufficient, and it may be used in any quantity for ophthalmic operations without fear of toxic symptoms. For major operations, such as enucleation, or for advancement operations in which there is apt to be considerable pain from stretching the muscles, 2 or even 4 per cent. solution may be used, though in the latter strength one must remember that the drug does have some toxicity, and it is not always possible to know how poor is the risk.

Generally speaking, the fact that procain is from one sixth to one seventh as toxic as cocain means that from six to seven times more procain can be injected than cocain, and yet patients are encountered who possess an idiosyncrasy for procain, and any local anesthetic should always be injected with caution. Therefore, it is far better to see how little solution can be injected and produce the desired results than to inject a large quantity and bring forth toxic symptoms.

Duverger[2] makes a general statement that, in ophthalmic operations, procain in 4 per cent. solution is the best; but he further states that, on account of the great absorption by orbital tissues, it is better never to inject more than 2 c.c., even though more than that has been used to produce deep anesthesia of the globe without the slightest toxic manifestations.

Of particular importance is the necessity of injecting the fluid very slowly and with slight interruptions in the administration. On the other hand, Labat, in discussing operations on the eye, states that enucleation and exenteration of the orbit are performed painlessly under infiltration anesthesia produced by two injections of 2 c.c. each of a 2 per cent. solution, carrried deep into the orbit according to the technic he and others describe.

In the majority of instances, especially in operations other than enucleation or exenteration of the orbit, a quantity not in excess of 2 c.c. of a 1 or 2 per cent. solution of procain will be required to produce satisfactory anesthesia, provided sufficient time elapses before the operative work is begun to give the anesthesia a chance to produce its maximum effect. There is the further advantage in smaller quantities in avoiding edema, which has a tendency to distort the parts and, under any circumstances, is an objectionable feature.

Epinephrin.—While the real value of epinephrin depends on its vasoconstrictor properties, thus aiding the suppression of hemorrrhage, it also has a field of usefulness when added to procain solutions in that it hastens and intensifies the action of the anesthetic drug and lengthens the duration of the anesthesia. This effect is brought about by the fact that the capillaries are contracted, thus delaying the absorption of the procain solution and reducing its toxicity. The slow destruction of the anesthetic drug locally prolongs the anesthesia. The fact that epinephrin delays the absorption of the procain solution that has been injected is indisputable. It also is indisputably proved that the procain solution introduced slowly into the circulation is less toxic than when rapidly injected.

Concerning the value of epinephrin when added to the procain solution, Smith,[3] in a late work on block anesthesia, says that if an anesthetic solution which is free from epinephrin is injected it is almost impossible to secure complete anesthesia, for the reason that the solution is rapidly absorbed and this rapid absorption not only prevents anesthesia from taking place but also increases the chance of toxic symptoms because it enters the circulation rapidly and is not restricted to the circumscribed area of injection.

While epinephrin is a valuable addition to the procain solution, yet it must be remembered that it, too, is toxic in doses beyond a certain limit. Toxic symptoms are evidenced by oppression on the chest, paralysis of the extremities with tonic and clonic convulsions, opisthotonos and frequent respiration. These symptoms have been produced by the injection of 8 minims (0.5 c.c.) of a 1:1,000 solution.

Several of the members of this section, in answering the questionnaire, have attributed toxic symptoms in local anesthesia to the epinephrin rather than to the anesthetic, whether it be cocain or procain. Therefore, it is well to remember that weak solutions of epinephrin are not only safest and act just as efficiently in producing the desired amount of ischemia, but act equally well in preventing absorption of the anesthetic and lessening general toxicity from the anesthesia. When associated with procain, the epinephrin should be in very dilute solution, from 1:100,000 to 1:200,000 or, as stated by Duverger, two drops of a 1:1,000 solution of epinephrin may be added to 5 c.c. of the procain solution.

Technic of Injection.—The solution should be sterilized by boiling.

All clinicians of experience are agreed that infiltration anesthesia is best accomplished by means of a very fine needle with a sharp point, the length depending on the depth of the injection. They also are agreed that the injections should be made very slowly.

In order to secure satisfactory anesthesia, it is not necessary to inject such large quantities as to produce marked edema. Infiltration of the tissues and lessening of any edema is aided by gentle massage. Topical applications of 4 per cent. cocain should be used when surface as well as deep anesthesia is expected.

As stated by Braun,[4] "No matter where one injects, the action of the anesthetic requires time, and its maximum efficiency will only be attained after many minutes have passed." For minor operations, a wait of from ten to fifteen minutes before operating is not too long, and from twenty to thirty minutes is usually necessary when deep seated injections are required, as in enucleations and advancement of muscles. Some of the failures to secure satisfactory anesthesia may be attributed to the fact that the operation was begun too soon after the injection of the anesthetic, though it may be due to the employment of too weak a solution.

The prevailing opinion that children are not suitable patients for local anesthesia is discredited by Braun, who says that many children are easily influenced and readily permit the injection, particularly if chocolate or other sweets are offered. He operates on children as young as 4 years of age, mostly under local anesthesia by the newer methods, and quotes Kredel concerning a clever way of preparing nursing babies for local anesthesia. The baby is first allowed to become hungry and at the beginning of the injection it is given a bottle, after which it does not concern itself with what goes on.

2. Duverger, C.: L'anesthesie locale en ophthalmologie.

3. Smith, A. E.: Block Anesthesia and Allied Subjects.
4. Braun: Local Anesthesia.

For the technic of infiltration anesthesia in various ophthalmic operations, the committee desires to call attention to its report before this section at the Boston session in 1921, in which will be found a summary of Duverger's recommendations as contained in his comprehensive work entitled "L'Anesthesie locale en ophthalmologie," and two excellent chapters in the last edition of Braun on "Local Anesthesia," and the very recent work on "Regional Anesthesia" by Gaston Labat.

From the standpoint of the general physical condition of the patient there are no contraindications to the use of infiltration anesthesia for an ophthalmic operation. It should be the anesthesia of choice in all those patients who have advanced cardiovascular or cardiorenal changes, who have pulmonary lesions, diabetes, or are advanced in age (the latter practically all have cardiovascular degenerative changes) because of its safety as compared to general anesthesia.

Your committee does, however, recognize some possible contraindications, such as an extremely nervous condition, sometimes found in a patient suffering from a hyperactive thyroid, or other conditions that lead to sensitiveness to psychic impressions, and a limited number of patients who on purely psychic grounds elect to have general anesthesia and should be humored in that respect if there are no contraindications to the administration of a general anesthetic. There are, too, some incorrigible and terror stricken children of all ages, as well as some others, whose cooperation cannot be secured, for whom a general anesthetic is preferable.

Judging from the experience of some of the leading European ophthalmologists as well as the experience of a goodly number of the members of this section, there is no good reason for considering infiltration anesthesia when properly used as contraindicated in any ophthalmic operation in which deeper anesthesia than can be obtained by topical application is desired. It has been demonstrated beyond a question of doubt, in a large number of instances, that infiltration anesthesia is entirely successful in those cases in which so many operators now employ general anesthesia. In fact, it is so satisfactory in the hands of some experienced ophthalmologists that they rarely resort to general anesthesia.

CONCLUSIONS

1. American ophthalmologists as a whole have not used infiltration anesthesia to the extent that its merit warrants.

2. Infiltration anesthesia furnishes a satisfactory anesthesia for most ophthalmic operations, and may supplant general anesthesia except in those patients whose cooperation cannot be obtained.

3. In those cases in which a satisfactory anesthesia is not secured from topical applications alone, infiltration anesthesia will be found to be a valuable adjunct and sufficient for any kind of ophthalmic work. Thus it will be found especially useful in cataract operations when used to paralyze the orbicularis muscle and prevent squeezing with possible loss of intra-ocular contents, and in advancement operations.

4. The anesthetic of choice should be procain in 1 or 2 per cent. solution, and never exceed 4 per cent. solution, of which latter solution 2 c.c. is sufficient, though 4 c.c. has been injected many times without toxic effects.

5. Epinephrin, 1:100,000 or 1:200,000 (two drops of a 1:1,000 solution of epinephrin to 5 c.c. of procain solution), should be added, not only for its ischemic effect but to prevent absorption of the solution, thus prolonging the anesthesia and lessening the toxicity of the procain.

6. The solution should be injected very slowly through a fine needle, and not less than ten minutes elapse before beginning operation. From fifteen to thirty minutes is not too long to wait before beginning such operations as enucleations and advancement of ocular muscles.

7. From the standpoint of the general physical condition of the patient, there are no contraindications to the use of infiltration anesthesia for ophthalmic operations. The possible contraindications are as already noted.

8. For the technic of securing satisfactory anesthesia by infiltration, the committee recommends any of the late works on local anesthesia, such as the last edition of Braun (Local Anesthesia), and in particular the work of Duverger ("L'Anesthesie locale en ophthalmologie), which is confined to anesthesia for ophthalmic work.

Respectfully submitttted.

ALBERT E. BULSON, JR., Fort Wayne, Ind., Chairman.
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New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

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Manufactured by E. R. Squibb & Sons, New York City. No U. S. patent or trademark.

The culture is grown on whey.

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SATURDAY, JANUARY 10, 1925

HEREDITY AND RICKETS

One outcome of the fruitful symposium at the Chicago session of the American Medical Association on the subject of rickets [1] has been the expression of agreement that this widespread malady is not hereditary in the sense of an involvement of the germ plasm of the susceptible individual. Even rickets in the mother seems to have no direct association with subsequent rickets in the offspring. The disease is presumably a postnatal rather than essentially a prenatal one. The evidences for this were clearly set forth in the illuminating group of papers presented in THE JOURNAL. From the standpoints of prophylaxis, therapy and the study of etiology, it is advantageous to know that in rickets there is no true hereditary factor affecting the germ plasm in such specific fashion that a generation later the defect is transmitted to the fetus.

Heredity has all too often been charged with responsibility for diseases that were difficult to approach from the investigative standpoint. Only a few years ago there was widespread belief that tuberculosis is inherited biologically. Williams [2] has clearly formulated the current view in the statement that in truth the children of tuberculous parents are often weak and malnourished; but the important thing to remember is that these children inherit tuberculous parents, that they come into a home in which tuberculosis is active. In short, heredity in this disease is of very little importance; environment, on the contrary, is exceedingly significant. A similar change of view regarding hereditary features of etiology might be recorded for other diseases. The upshot of these altered opinions is that prophylactic measures rather than fruitless discussions about heredity become of prime importance for the welfare of the young. In emphasizing, with Hess, that the problem of rickets is not prenatal but prophylactic, Howland has said that, just as prophylactic treatment has lessened and will further lessen the incidence of congenital syphilis, so prophylactic treatment has diminished and will further diminish the number of rachitic children, especially those with marked deformity.

A somewhat striking physiologic implication has arisen out of the newer studies of rickets. Lack of sunlight and simultaneous rapidity of growth are outstanding factors that seem to be provocative of the disease in the young; yet it is not ordinarily found in the new-born. Hess and Weinstock remind us that although these two predisposing conditions are present throughout intra-uterine life in most marked degree, it is surprising that under such adverse conditions rickets does not develop in the course of the long period of pregnancy. It is a period of most rapid growth, taking place in an environment absolutely devoid of light. That normal growth and metabolism can take place under such conditions, they add, would seem to emphasize the superior efficiency of nutrition by way of the placenta, as compared with that carried out through the agency of the alimentary tract. Few, indeed, are the circumstances in normal adult life under which the gastro-enteric tract loses its dominant importance in relation to the utilization of our nutrients.

1. Moore, C. U.: Newer Clinical Signs of Early Rickets, J. A. M. A. 83:1469 (Nov. 8) 1924. Findlay, Leonard: The Underlying Cause in the Pathogenesis of Rickets, ibid., p. 1473. Wyman, E. T., and Weymuller, C. A.: The Organization of a Special Clinic for the Treatment of Rickets with the Mercury Vapor Quartz Lamp in an Outpatient Department, ibid., p. 1479. Hess, A. F., and Weinstock, Mildred: Rickets as Influenced by the Diet of the Mother During Pregnancy and Lactation, ibid. 83:1358 (Nov. 15) 1924. DeBuys, L. R., and von Meysenbug, Ludo: Correlation of Clinical, Roentgenologic and Serologic Evidences of Rickets in Breast-Fed, ibid., p. 1563; discussion, ibid., p. 1564.

2. Williams, J. F.: Personal Hygiene Applied, Philadelphia, 1922.

DEATHS OF PHYSICIANS IN 1924

During 1924, the deaths of 2,486 physicians in the United States were recorded in THE JOURNAL. Adding to that number 2 per cent. on account of delayed reports and possible omissions, we estimate the total number of deaths during the year at 2,536. On the estimate of 145,966 physicians in the United States, the number in the American Medical Directory, this is equivalent to an annual death rate of 17.37 per thousand. The death rate for 1923, according to THE JOURNAL'S computation, was 17.95 per thousand, and the average for the last twenty-three years has been 16.94.

Ages.—The age at death of the 2,448 whose age was stated varied from 22 to 99 years. Twenty-seven of the decedents were under 30 years of age; 113 were between 31 and 40; 331 between 41 and 50; 597 between 51 and 60; 671 between 61 and 70; 483 between 71 and 80; 205 between 81 and 90, and twenty-one between 91 and 99. The largest number of deaths at any given age occurred at 65 years.

Causes of Death.—Of the 2,433 deaths for which the causes were given, diseases of the circulatory system accounted for 893, the largest number. Some form of heart disease accounted for 518, and of these angina pectoris was specified in seventy; myocarditis in sixty-two; valvular disease in twenty-four; endocarditis in sixteen, and acute dilatation in fourteen.

Cerebral hemorrhage accounted for 294 deaths, and was the second most frequent cause given. Diseases of the respiratory system caused 248 deaths, and of these 219 were due to pneumonia, six to influenza, and five to pulmonary edema. Diseases of the genito-urinary system caused 165 deaths, of which number 117 were reported as due to nephritis and thirty-seven to uremia. Diseases of the digestive system caused 130 deaths, the largest number ascribed to one cause being thirty-two for appendicitis, then cirrhosis of the liver, twenty; peritonitis, seventeen; duodenal ulcer, thirteen, and gastric ulcer, ten. Of the 328 deaths due to so-called general diseases, 138 were due to cancer, the organs most frequently affected being the stomach (twenty-one); intestine (sixteen); liver (ten); bladder (nine). Among the general diseases, tuberculosis was the second most frequent cause of death given with fifty-nine; then septicemia, thirty-nine; diabetes mellitus, thirty-five, and leukemia, ten. Diseases of the nervous system caused sixty-two deaths, twenty-eight of which were due to some form of paralysis; nine to meningitis; six to epidemic (lethargic) encephalitis; six to brain tumor, and four to some type of insanity. Seventy-nine deaths followed surgical operations. Five deaths were ascribed to fractures; four to carbuncles; six to aneurysm; ten each to thrombosis and embolism, and fifty-four to arteriosclerosis. For fifty-three deaths, no cause was reported.

Accidents and Homicides.—The causes and distribution of the 102 deaths due to accidents were: automobile, fifty-five; drowning, eight; falls, eight; firearms, five; grade crossings, four; poison, three; asphyxiation, three; street car, three; lightning, aeroplane, gas, phenol (carbolic acid), horse, and the roentgen ray accounted for the remainder. There were thirteen homicides, all due to firearms, and five of these physicians were killed by bandits.

Suicide.—Forty-five physicians ended their lives by suicide; twenty-eight, with firearms; five, poison; two, jumping from high places; two, morphin; one, gas; one, hanging; one, chloroform, and in five instances the method was not reported.

Civil Positions.—Among the decedents, fifteen had been members of state legislatures; forty-six, members of boards of education; thirty-eight, members of boards of health; twenty-three, mayors of cities; twenty-one, coroners; fifteen, members of boards of medical examiners; thirteen, authors; four, lawyers; forty, druggists; 103, Civil War veterans; twenty-one, Spanish-American War veterans; 120, World War veterans; ten, bank presidents; two, judges, and one, a missionary.

Association Officers.—Two physicians who died in 1924 had been President of the American Medical Association; two, vice president; one, a member of the House of Delegates, and two, officers of sections. Eighteen had been president of state medical societies.

THE LOCALIZED ACTIONS OF DRUGS

The cause of the specific localization of action of drugs and poisons is always among the important and fascinating features of pharmacologic research. Why should epinephrin, for example, stimulate the sympathetic nerve endings rather than the parasympathetic, sensory or other nerve structures, or why should digitalis exert its characteristic effect on the vagus mechanism and not on other craniosacral nerves? Instances may be cited in which tissues in different species, apparently identical embryologically, morphologically and functionally, do not respond the same way to the same agent, the response being absent or qualitatively different. The difference may arise merely in connection with a difference in functional state. The solution of the mechanism of action of drugs and poisons is desirable for several reasons: drugs would be better understood; their therapeutic indications and uses would be more definite, and more light would be shed on basic cellular processes.

Recently, La Barre[1] found that the peristaltic response of intestinal loops to various opium alkaloids and derivatives was altered by diffusion of the normal cholin content from the loops. The activity was depressed by some and augmented by other alkaloids. Replacement of the cholin restored the peristaltic activity to normal. He also showed that mixtures in vitro of cholin and these alkaloids caused an alteration in their effects on the intestine. Along somewhat different lines, Ransom[2] has sought for the cellular component involved in the action of digitonin. This worker found that equimolecular mixtures of digitonin and various sterols found in tissues prevented the usual toxic action of this saponin principle on the heart, and therefore concluded that the profound modifications of cellular function caused by the digitonin might be exerted through the cholesterol or related substances in the cells. Voegtlin[3] has recently emphasized the rôle of the sulphhydril group in the union of arsphenamin with the cells. This relationship marks the first step in a better understanding of the mechanism of action of arsphenamin. Dale[4] has pointed out the need of fundamental studies of all chemotherapeutic agents, since the mechanism of the antiseptic action of not a single one is understood, and, contrary to prevalent conceptions, there is evidence that they may act through the tissues of the host and not directly on the invading parasites.

Various drugs lend themselves to studies of the relationship between chemical structure and pharmacologic action. A well known instance is that of salicylic acid. In this drug the hydroxyl and carboxyl groups are in the ortho position to each other; but if these two groups are arranged in the meta or para positions, the resulting compounds are pharmaco-

1. La Barre, J.: Arch. intern. pharm. therap., **29**: 179, 1924.
2. Ransom, F.: Biochem. J. **16**: 668, 1922.
3. Voegtlin, Carl; Dyer, H. A., and Leonard, C. S.: Pub. Health Rep. **38**: 1882 (Aug. 17) 1923.
4. Dale: Brit. M. J. **2**: 219 (Aug. 9) 1924.

logically inactive and therapeutically inefficient in rheumatic fever. Another group of interesting agents in this connection is the phenylendiamins. Paraphenylendiamin, when injected subcutaneously into any region of the body, or when given by mouth, promptly produces a marked edema of the head and neck. Tainter and Hanzlik [5] have shown that the action of this drug is to produce an extreme hyperpermeability of the capillaries, which results in the loss of whole plasma from the blood stream into the tissues. The seat of action of this agent is in the capillaries of the head and neck. No explanation for the lack of response of capillaries in other regions is at hand. Observations made by Hanzlik [6] showed the importance of the position of the amino group in the phenylendiamin molecule. That is, metaphenylendiamin, instead of producing edema in the head and neck region, which is characteristic of the para compound, produces, within a few hours, large serous effusions in the abdominal, pleural and pericardial cavities. The ortho compound has not been studied. For the present, the importance of these differences in the behavior of the phenylendiamins can only be speculated about.

From a practical standpoint, it will be recalled that acetylsalicylic acid and certain other drugs can cause peculiar and troublesome edemas and urticarias of the face and head, so that if the mechanism of the selective edema and effusion actions of the phenylendiamins can be solved, an approach to the study of analogous clinical side-actions may be made. Dermatitis, systemic poisoning, asthma and even anaphylactic states are reported from the use of paraphenylendiamin in cosmetics, hair dyes, fur dyes and industry. Capillary injury may well be the underlying pathologic change in all these conditions.

An exact and detailed investigation of the actions of drugs and poisons may reveal interesting and unsuspected relations. Such studies eventually lead to clearer and better conceptions of physiologic and pathologic processes.

NEW LIGHT ON THE FEATURES OF ACUTE INTESTINAL OBSTRUCTION

The train of symptoms that often attend acute intestinal obstruction is familiar to every clinician. The phenomena have given rise to much speculation and also have formed the subject of repeated experimental investigation, particularly because the severity of the manifestations in many cases is so pronounced at an unexpectedly early moment after the continuity of intestinal function is interrupted that the cause has not been clearly apparent. The contradictory and contending views of workers in this field have frequently been detailed in THE JOURNAL. The mortality is high in certain types of cases, and the plan of relief a problematic one. Anhydremia, intoxication with bacterial products from obstructed intestinal loops or disintegration products of the exfoliating mucosa, hypochloremia, and shock—these and other possible factors have been drawn into explanation without, however, finding universal acceptance as a satisfactory guide to the pathogenesis of such clinical states as may be presented by ileus, intussusception and strangulated hernia.

It cannot be said that there has been a dearth of experimental studies on animals in the hope of finding a key to the situation. It should be noted, however, that most attempts heretofore made to reproduce the symptoms of obstruction have involved the induction of profound narcosis resulting in general depression and an atonic condition of the bowel. To avert this as far as possible and imitate more nearly the conditions presented by affected persons, Hausler and Foster [1] of the University of Oregon Medical School have produced different types of intestinal obstruction under local anesthesia in animals. In some cases they attempted complete blockage of the bowel lumen only, with practically no circulatory involvement. Such conditions are produced in man by gallstones, enteroliths, foreign bodies, adhesions or bands. In other animals, acute strangulation in which there was an interference with the venous, arterial and lymphatic circulation in the bowel wall and mesentery, as well as complete obstruction of the intestine lumen, was brought about. This is what occurs in two thirds or more of the cases of obstruction.

The outcome of the intestinal conditions thus produced closely resembles human syndromes. The latter as well as their pathology are quite different in the two types of cases that may be described, respectively, as acute simple obstruction and acute strangulation. In the former, the Oregon investigators tell us, we are dealing with obstruction of the lumen of the intestine without circulatory involvement of much consequence. In the latter, there is segmental obstruction plus extensive vascular derangement. They have pointed out that in both groups the course may be so rapid that hypochloremia, alkalosis, dehydration and inanition do not have time to develop. It is thus evident that the usually assumed causes of death in simple obstruction play little or no part in acute strangulation. It is believed that death in acute intestinal strangulation is due to a varying combination of shock and toxemia, the preponderance of one or the other of these causes being largely determined by the length of bowel involved and the degree of venous occlusion. In simple obstruction the course is slow and gradually progressive. Inanition and dehydration may develop, or peritonitis following perforation. The collapse symptoms are always delayed. It is evident, therefore,

5. Tainter, M. L., and Hanzlik, P. J.: J. Pharmacol & Exper. Therap. 24: 179, 1924.
6. Hanzlik, P. J.: J. Indust. Hyg. 4: 386 (Jan.), 448 (Feb.) 1923.

1. Hausler, R. W., and Foster, W. C.: Studies of Acute Intestinal Obstruction, I, Different Types of Obstruction Produced Under Local Anesthesia, Arch. Int. Med. 34: 97 (July) 1924. Foster, W. C., and Hausler, R. W.: Studies on Acute Intestinal Obstruction, II, Acute Strangulation, ibid. 34: 697 (Nov.) 1924.

as Hausler and Foster specifically insist, that such differences in the pathologic condition and in mortality demand special operative and postsurgical treatment for each type.

Current Comment

THE SEMICENTENARY OF THE DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT

The issue of the *Deutsche medizinische Wochenschrift* for Dec. 5, 1924, is a special number in honor of the fiftieth anniversary of that publication. In the introduction, its editor points with pride to the fact that this epoch has been marked by the publication in its pages of the fundamental discoveries of Robert Koch, von Behring and Paul Ehrlich. Since its foundation by Paul Börner, Sept. 25, 1875, the periodical has been edited by Samuel Guttmann, who succeeded Börner in 1885; Albert Eulenburg, who followed in 1894, and the present editor, Dr. Julius Schwalbe, who assumed the position in 1904. The policy of the *Wochenschrift* has been the publication of original observations dealing with practical medicine, and a news service as well as a survey of current literature. The anniversary number is marked particularly by a series of reviews of progress during the last fifty years in each of the special medical fields, by German leaders. The editor and the publisher are to be congratulated on their enterprise in the preparation of this valuable anniversary number, as well as on the place achieved by the periodical during its career.

THE WORLD'S HEALTH

The recurring reports of new outbreaks of rapidly spreading disease here and there throughout the world sometimes bring a note of discouragement to those who are interested in the application of scientific research to human welfare. They are prone to ask themselves whether any real mastery over disease is being acquired. Harris [1] has recently remarked, in a review of the subject, that living in these days of express trains, automobiles and flying machines may seem hazardous, but that all these mechanical means of killing people are relatively safe when compared with that great destroyer ignorance, which for so many generations has marched up and down the earth causing misery through plagues, famines and high infant mortality. The banishing of ignorance, he adds, is gradually making man the master of his environment. There is an encouraging message of apparent substantiation in the latest report of the Health Section, League of Nations Secretariat. Sydenstricker's review [2] of this presents the news that there is no indication of a pandemic condition. On the contrary, a comprehensive summarization of reports on disease prevalence from practically all parts of the world where such reports are available shows more favorable health conditions than have been indicated for a good many years past. It is still true that there are plague spots and that cholera is on the rampage in India; but influenza is not widely epidemic, and other major "ills of mankind" are seemingly stationary, if not improved. The situation in Germany, where the postwar havoc of disease has been disconcerting, is notably better. To the defenders of the modern hygienic faith of preventive medicine it is gratifying to read that the smallpox situation is, for the time being, decidedly favorable. Northern Europe, including Scotland and Ireland, as well as the Baltic republics, and central Europe as far south as Roumania, are quite free from smallpox, and it is declining rapidly nearly everywhere else where it has been prevalent. Good news gives satisfaction—and courage to meet future emergencies in the world's health, of which no single nation can with impunity longer remain oblivious.

1. Harris, F. S.: Scientific Research and Human Welfare, New York, the Macmillan Company, 1924.
2. Sydenstricker, Edgar: Current World Prevalence of Disease, Pub. Health Rep. 39: 3089 (Dec. 5) 1924.

THREATENED TRANSFER OF THE PUBLIC HEALTH SERVICE

THE JOURNAL [1] called attention recently to the proposed transfer of the Public Health Service from the Treasury Department to a new Department of Education and Relief. December 30, Senator Smoot reported to the Senate that he had received a letter from the White House asking that this legislation be taken up at an early date and passed, so that it may become a law at the present session of Congress.[2] To those who have been looking forward hopefully toward increased efficiency and economy in the public health activities of the federal government, its enactment in its present form will be a distinct disappointment. In the early stages of the formulation of this legislation, a substantial coordination of the principal public health activities was provided for, but almost the only vestige of the plan that now remains is the proposed transfer of the Public Health Service. The only reason given for this transfer is that certain representatives of the Treasury Department testified that expert supervision was needed, and that the Treasury Department was not equipped to provide such supervision. This situation is apparently to be controlled through the pending legislation by providing an assistant secretary for public health, not by the proposed transfer. Yet such an assistant secretary might as well be an officer of the Treasury Department as an officer of the new department that it is proposed to organize. The transfer may be expected to check at least temporarily the progress of the Public Health Service. It will not bring that service into any more intimate relations with the other health activities of the government than now exist. On the other hand, it may be expected to postpone indefinitely progress toward reorganization on an efficient and economical basis. Immediate action should be taken by all interested physicians to acquaint their senators and representatives with the situation and to urge them to see that before enactment the pending bill be amended so as to allow the Public Health Service to remain in the Treasury Department

1. Reorganization of Federal Health Activities, editorial, J. A. M. A. 83: 2021 (Dec. 20) 1924.
2. Congressional Record 66: 1040 (Dec. 30) 1924.

or else to assemble in the proposed bureau of public health in the new department all the existing public health agencies of the government. The bill to be amended is S. 3445 and H. R. 9629, a bill to provide for the reorganization and more effective coordination of the executive branch of the government, to create a Department of Education and Relief, and for other purposes.

Association News

ANNUAL CONGRESS ON MEDICAL EDUCATION, MEDICAL LICENSURE, PUBLIC HEALTH AND HOSPITALS

The next Annual Congress on Medical Education, Medical Licensure, Public Health and Hospitals will be held in the Gold Room of the Congress Hotel, Chicago, March 9, 10, 11 and 12.

Council on Medical Education and Hospitals

On Monday and Tuesday, March 9 and 10, the Council on Medical Education and Hospitals of the American Medical Association will hold its twentieth annual conference. This conference will deal with the progress made in medical education since 1900, when the American Medical Association began its constructive, organized work. The preliminary program is as follows:

A QUARTER-CENTURY IN MEDICAL EDUCATION

MONDAY, MARCH 9

1. Twenty-Five Years' Progress in Medical Education—A Symposium.
   Anatomy.—Dr. Charles M. Jackson, professor of anatomy, University of Minnesota Medical School, Minneapolis.
   Biochemistry.—Dr. Albert P. Mathews, professor of biochemistry, University of Cincinnati College of Medicine.
   Physiology and Pharmacology.—Speaker to be announced.
   Pathology and Bacteriology.—Dr. James Ewing, professor of pathology and bacteriology, Cornell University, New York.
   Medicine and the Medical Specialties.—Dr. Samuel W. Lambert, dean emeritus of Columbia University, College of Physicians and Surgeons, New York.
   Surgery and the Surgical Specialties.—Dr. W. D. Haggard, professor of surgery, Vanderbilt University School of Medicine, Nashville, Tenn.
   Obstetrics and Gynecology.—Dr. Reuben Peterson, professor of obstetrics and gynecology, University of Michigan Medical School, Ann Arbor.
   Entrance Requirements, Grading of Students, Promotion, Etc.—Dr. John M. Dodson, former dean of Rush Medical College, Chicago.
   Buildings, Physical Equipment, Finances and Faculty.—Dr. Burton D. Myers, assistant dean of Indiana University School of Medicine, Bloomington.
2. Results of Improved Medical Education in the Government Medical Services.
   The Army.—Major General Merritte W. Ireland, Surgeon-General, United States Army, Washington, D. C.
   The Navy.—Rear Admiral Edward R. Stitt, Surgeon-General, United States Navy, Washington, D. C.
   The Public Health Service.—Dr. Hugh S. Cumming, Surgeon-General, United States Public Health Service, Washington, D. C.
3. Cooperation in Medical Education. Dr. Charles R. Bardeen, dean of the University of Wisconsin Medical School, Madison.
4. Correlation of Teaching Between the Laboratory and Clinical Departments of the Medical School. Dr. O. H. Perry Pepper, professor of medicine, University of Pennsylvania Medical School, Philadelphia.

TUESDAY, MARCH 10

5. Results of a Study of Educational Conditions in Rural Communities. Mr. George F. Zook, Chief, Division of Higher Education, U. S. Bureau of Education, Washington, D. C.
6. Present Conditions of Country Life in the United States by a Representative of the American Country Life Association.
7. Distribution of Physicians in the United States. Dr. William Allen Pusey, President of the American Medical Association, Chicago.
8. Comments on the Survey Made Under the Auspices of the General Education Board.
   Mr. Leonard V. Harrison.
   Mr. Lewis Mayers.
   Mr. Abraham Flexner.
   Professor Raymond Pearl, Johns Hopkins School of Hygiene and Public Health, Baltimore.
9. The Situation in Minnesota. Dr. E. P. Lyon, Dean of the University of Minnesota Medical School, Minneapolis.
10. Essential Knowledge for the General Practitioner of Today. Speaker to be announced.

Federation of State Medical Boards

On Wednesday, March 11, the Federation of State Medical Boards of the United States will hold its annual session. The preliminary program is as follows:

1. Essential Elements of an Adequate Examination. Dr. David L. Edsall, dean of Harvard University Medical School, Boston.
   The General Fundamental Principles.
   As Related to Medical Sciences.
   Clinical Subjects.
   Medical Licensure.
   Written Versus Practical.
2. Essential Principles of a Medical Practice Act. Speakers to be announced.
   Functions of a Medical Practice Act.
   Eligibility for License.
   Essential Qualifications.
   Methods of Determining.
   Methods of Enforcement.
   Criminal Prosecution.
   Quo Warranto.
   Injunction Procedure.
   Revocation of Licensure.
   Diagnosis and Treatment.

American Conference on Hospital Service

On Thursday morning, March 12, the Annual Session of the American Conference on Hospital Service will be held. Dr. S. S. Goldwater, president of the conference and director of Mount Sinai Hospital, New York, will preside. The preliminary program is as follows:

1. The Extension of Hospital Privileges to all Practitioners of Medicine. Dr. S. S. Goldwater, president of the conference and director of Mount Sinai Hospital, New York.
2. Advantages of the Closed Hospital. Speaker to be announced.
3. Advantages of the Open Hospital. Speaker to be announced.
4. Hospital Facilities and the Medical Profession in the United States in 1924. Speaker to be announced.
5. Annual Report on the Progress of the Hospital Library and Service Bureau by Miss Dorelda Hamlin, director.

Public Health and Hygiene

Thursday afternoon, March 12, papers will be given dealing with public health and hygiene, under the auspices of the Bureau of Health and Public Instruction. The preliminary program is as follows. Speakers will be announced.

The Medical and Health Education of the Public.
By Means of Bulletins and Journals.
By Means of Newspapers.
By Means of Addresses and Radio Talks.
By Means of Health Expositions and Exhibits.
By Means of Periodic Examinations of Apparently Healthy Persons.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARKANSAS

New Medical Buildings.—The budget recently filed with the state comptroller by the dean of the University of Arkansas Medical Department calls for a building fund of more than $1,000,000 for new medical buildings, about half of which sum would be used for the immediate construction of a state general hospital and clinical buildings. Plans are also being made to build and equip laboratory buildings and a research institute. If these plans mature, the new medical school will be located on the site west of the Deaf Mute Institute.

Society News.—At the Dec. 15, 1924, meeting of the Pulaski County Medical Society, Dr. William E. Jones was elected president; Dr. Rupert M. Blakely, vice president; Dr. Royal J. Calcote, secretary (reelected), and Dr. William R. Bathurst, treasurer (reelected). At this meeting, the annual dues were raised from $5.50 to $6. Dr. O. C. Wenger, Hot Springs, regional consultant in urology, U. S. Public Health Service, will address the society, January 19, on "Venereal Disease Prophylaxis from a Medical Point of View."

CALIFORNIA

Antiplague Ordinance.—The city of Los Angeles adopted an ordinance, Nov. 21, 1924, which provides for the ratproofing of buildings, the trapping of rats, the prevention of entrance of rats from vessels, and the prevention of access by rats to food and garbage.

Hospital News.—The Oaks Sanatorium, Los Gatos, has just opened a $20,000 building, for which funds were subscribed by various persons under an agreement that patients of moderate means who have tuberculosis would be cared for at a cost of $21 a week. The new unit will accommodate twenty patients.

Popular Medical Lectures.—The Stanford University Medical School has announced its forty-third course of popular medical lectures. They will be given at Lane Hall, San Francisco, on alternate Friday evenings, beginning January 9, with Dr. Albion W. Hewlett, "Influenza and Common Colds"; January 23, Dr. Walter M. Dickie, secretary, state board of health, "Migration as a Factor in Communicable Diseases"; February 6, Dr. Newton E. Wayson, U. S. Public Health Service, "Parasitic Infections"; February 20, Dr. Walter C. Alvarez, "Constipation and Autointoxication"; March 6, Dr. William C. Hassler, health officer, San Francisco, "Loss of Life from Preventable Diseases"; March 20, Dr. Edwin W. Schultz, "Vaccines and Serums."

CONNECTICUT

Scarlet Fever.—With 101 cases of scarlet fever in Bristol, Dec. 22, 1924, many public gatherings were either curtailed or abandoned. On the same date there were sixty-eight cases of scarlet fever in New Britain, an increase of 25 per cent. over the number on the same date last year.

DISTRICT OF COLUMBIA

Medical Building.—An eight story office building, to be erected at a cost of a million dollars at 1801 I Street, N. W., will soon be erected by a corporation composed of Washington physicians. It will be especially designed for the use of physicians and surgeons. Dr. Charles S. White is president of the corporation; Dr. Oscar B. Hunter, secretary, and Dr. Ralph M. Le Comte, treasurer.

ILLINOIS

Hospital News.—It has been announced that a $350,000 addition to the Methodist Hospital, Peoria, will be constructed in the spring.——Dr. John W. Seids has been elected president of the Moline Lutheran Hospital staff for 1925; Dr. Frank N. Davenport, vice president; Dr. Clifford C. Ellis, secretary.

Chiropractor Freed on Plea of Ignorance.—It is reported that Milo M. Grimes, chiropractor, Rock Island, who was arrested last April charged with violating the state medical law for failing to report a communicable disease, was found not guilty by a jury, Dec. 17, 1924, he having pleaded ignorance of the fact that William Miller, his patient, had diphtheria.

Industrial Commission Award Set Aside.—Circuit Court Judge Brewer, Danville, Dec. 22, 1924, set aside the award of the Industrial Commission in the case of Dora Howard against John Rissman & Son, manufacturers. It was charged that the company was responsible for an outbreak of typhoid fever among its employees in 1920 on account of the drinking water it provided. Judge Brewer held, it is reported, that there had been no proof presented that the company was in any way to blame.

Society News.—Dr. Lewis C. Taylor, Springfield, president, Illinois State Medical Society, addressed the Madison County Medical Society, Edwardsville, January 2, on "Medical Legislation."——Dr. William M. Marriott, superintendent, Children's Hospital, Washington University, St. Louis, lectured under the auspices of the St. Clair County Medical Society at the Elks Club, East St. Louis, January 8, on "Infant Feeding."——Dr. Lewis W. Bremerman, Chicago, addressed the Academy of Medicine of Muncie recently on "Ureteral Calculi."

Chicago

Lectureship Endowed.—It was announced, Dec. 29, 1924, that Dr. Charles H. Mayo, Rochester, Minn., will endow a lectureship in surgery at Northwestern University Medical School.

Cook County Health Board.—John W. Alvord has been chosen head of the advisory board to the county health department, and Dr. Samuel S. Winner, secretary. The board comprises also Drs. Herman Bundesen, William A. Evans, Ethan A. Gray, Otto S. Pavlik, Herbert L. Wright and Florian G. Ostrowski.

Gifts to Northwestern.—In a New Year's message, the president of Northwestern University announced gifts of $675,000 to that school by anonymous donors. Northwestern University embarked about 1920 on a campaign to raise in a ten year period about $25,000,000. During the first five years, just ended, the president said, it is reported, that the university has received $10,000,000 of new money and that its properties have increased in that time $2,500,000 in value.

The Typhoid Outbreak.—Ninety-nine cases of typhoid fever and eleven deaths have occurred in the outbreak in this city, which began late in November. During the same period, thirty-nine cases have occurred in suburban towns. It is reported that practically all these cases have been traced to raw oysters, and that oysters had been shipped to Chicago which were taken from the Raritan and Princess bays beds in the East which are in close proximity to the mouth of a great sewer.

Biologic Chemistry Lectures.—The Committee on Evening Courses for Chemists of the Chicago Section of the American Chemical Society has arranged for a series of lectures on biologic chemistry, which will start early in January and continue one each week for twelve weeks. This is the only course to be presented in the winter term. Prof. Martin E. Hanke, who is associated with the department of physiologic chemistry and pharmacology, University of Chicago, will give the lectures. Those interested in enrolling are requested to communicate at once with Arthur Guillaudeu, 6536 South Campbell Avenue.

Society News.—At the joint meeting of the Chicago Medical Society and the Chicago Laryngological and Otological Society, January 14, Dr. George E. Shambaugh, Chicago, will give a lantern slide demonstration on some of the newer conceptions of the structure and function of the internal ear. Dr. John Gordon Wilson will speak on "Some Present Day Clinical Problems."——At the January 9 meeting of the Chicago Roentgen Society, Dr. Hollis E. Potter spoke on "A Present Day Study of the Duodenum," and Dr. Harold Swanberg, Quincy, on "A Radiologic Educational Program for the General Practitioner."

INDIANA

Society News.—Dr. Gilbert M. LaSalle, Wabash, was recently elected president of the Wabash County Medical Society; Dr. Raymond A. Naugle, Wabash, vice president, and Dr. Ora G. Brubaker, North Manchester, secretary-treasurer (reelected).

Physician Acquitted on Narcotic Charge.—Dr. James C. Ross, Marion, recently indicted for violating the narcotic law, was acquitted in circuit court, Dec. 24, 1924, under instructions from the presiding judge after seven witnesses had testified for the state, it is reported.

County Society Protests Removal.—The Allen County Medical Society has protested the removal of Dr. Byron E. Biggs as superintendent of the Indiana State School for Feeble Minded Youths, Fort Wayne, it is reported, asserting that the administration of the public charities should not be part of the political spoils system. According to the South Bend *News*, Dr. Biggs was given to understand that the board of trustees was to appoint in his place a brother of Governor Jackson.

Decision Concerning Unrecognized Practitioners.—The judicial council of the Indianapolis Medical Society was recently called on to decide concerning the ethics of any member of that society who consulted or performed operations at the Clark-Blakeslee Hospital in that city. The council decided, according to the *Indianapolis Medical Journal*, that it regards the consultation with and the performing of surgical operations for cultists, sectarians or individuals who are not graduates of regularly constituted schools of medicine and surgery as a violation of the Principles and Ethics of the American Medical Association.

IOWA

Smallpox Warning.—According to the state health commissioner, Dr. Rodney P. Fagen, 123 cases of smallpox, many of which were virulent, had been reported in this state from Dec. 1 to Dec. 18, 1924. In a letter to mayors of cities of Iowa, Dr. Fagen considered that local boards of health would be warranted to make tentative plans to combat a threatening epidemic, and to find out to what extent available resources,

physicians, hospitals and nurses are willing to donate their time to free clinics and preventive measures.

Academy Entertains Faculty.—The Des Moines Academy of Medicine entertained twenty members of the faculty of the State University of Iowa College of Medicine at the Iowa Lutheran Hospital, Dec. 10, 1924. Victor C. Myers, Ph.D., head of the department of biochemistry, spoke on "Clinical Conditions of Alkalosis"; Dr. Fred M. Smith, head of the department of theory and practice, on "Electrocardiographic Changes Associated with Disease of the Coronary Arteries," and Dr. Philip C. Jeans, head of the department of pediatrics, on "Postoperative Acidosis."

Society News.—The Carroll County Medical Society elected, Dec. 16, 1924, Dr. Channing E. Wolte, Coon Rapids, president; Dr. Alois Kessler, Carroll, vice president; Dr. Jesse B. Hudson, Carroll, secretary-treasurer. At this meeting, Dr. Tom B. Throckmorton, Des Moines, reviewed the work of the state medical society; Dr. Merrill M. Myers, Des Moines, gave an illustrated lecture on diseases of the heart, and Dr. Clifford W. Losh, Des Moines, an illustrated lecture on diseases of the kidneys.——At the annual meeting of the Lee County Medical Society, Fort Madison, Dec. 19, 1924, Dr. George Gellhorn, St. Louis, gave an address on "The Use of Radium in Gynecology"; Dr. Frank M. Fuller, Keokuk, president, Iowa State Medical Society, spoke on medical legislation; Dr. Alfred A. Strauss, Chicago, on "The Value of Gastro-Enterostomy as Compared to Partial Gastrectomy in Duodenal and Gastric Ulcer." At the business meeting, Dr. John H. Wilson, Keokuk, was elected president; Dr. Frank R. Richmond, Fort Madison, vice president, and Dr. William Rankin, Keokuk, secretary-treasurer. The Hon. Joseph R. Frailey gave an address at the banquet on "Capital Punishment as It Relates to the Medical Profession."

KANSAS

Society News.—At the annual election of the Wyandotte County Medical Society, Kansas City, Dec. 16, 1924, Dr. Louis F. Barney, Kansas City, was elected president; Dr. John O. Milner, Kansas City, vice president; Dr. James W. Sparks, Kansas City, secretary, and Dr. Henry S. McKenzie, Kansas City, treasurer.

State Board Retains Dr. Nyberg.—At a meeting of the state board of health, Topeka, Dec. 19, 1924, the board reappointed Dr. M. O. Nyberg, Wichita, as secretary for a term of four years. At a meeting, last summer, Dr. Nyberg's resignation was submitted and was to have been effective, January 1. The resignation of Dr. Jacob J. Entz, Marion, who was appointed state epidemiologist, was accepted and Dr. Clarence H. Kinnaman, Topeka, former state epidemiologist, was reappointed to the place, it is reported.

KENTUCKY

Society News.—At a recent meeting of the Fleming County Medical Society, Flemingsburg, Dr. John W. Bellomy, Sherburne, was elected president; Dr. Charles R. Garr, Flemingsburg, vice president, and Dr. James B. O'Bannon, Mount Carmel, secretary-treasurer.——At a recent meeting of the Clark County Medical Society, Winchester, Dr. Samuel J. Rose was reelected president; Dr. Ernest R. Cole was elected vice president, and Dr. William Carl Grant, secretary-treasurer.

MAINE

Personal.—The governor has appointed Dr. George W. Alexander, Gardiner, to be a member of the state public health council to fill the vacancy caused by the death of Dr. Frank N. Whittier, Brunswick. Dr. Gilbert M. Elliott, Brunswick, has been appointed medical examiner for Cumberland County.

MASSACHUSETTS

Dr. Worcester Honored.—A testimonial dinner in honor of Dr. Alfred Worcester, Waltham, past president of the Massachusetts Medical Society, was recently given by more than 200 friends and guests, at which a testimonial volume containing many articles from Dr. Worcester's writings was presented to him. Dr. Worcester has been a general practitioner in Boston for many years and was one of the founders of the Waltham Hospital, the Rutland Sanatorium and the Waltham Baby Hospital.

Demand for Raw Milk.—The regulations of the board of health of New Bedford, adopted a year ago, providing that all milk that is not certified must be pasteurized, have been changed in accordance with a demand for raw milk, which can be produced under less exacting circumstances. The change provides that milk from cows which have been tuberculin tested under the supervision of state and federal officials may be sold in the raw state, providing it is bottled and sealed on the farm where it is produced, marketed in bottles whose cap bears the name of the producer, the kind of milk and the date, and providing its bacterial content does not exceed 50,000 per cubic centimeter.

Society News.—At the thirty-fifth meeting of the Interurban Clinical Club, Boston, Dec. 5-6, 1924, clinics were held at the Peter Bent Brigham, the New England Deaconess, the Massachusetts General and the Boston City hospitals, and demonstrations were given at the Harvard Medical School. At the dinner at the Harvard Club, the discussion centered about the question of opportunity and correlation for the superior student, with comments on the comprehensive examination and the tutorial method.——At the January 14 meeting of the Worcester District Medical Society, Worcester, Dr. Royal P. Watkins will speak on "The Doubtful Abdomen," and Dr. Lewis G. Cole's motion pictures of the stomach and abdomen will be shown.——The winter program of the Boston Health League will review the fundamental services carried on in the Boston health units, the first meeting, Dec. 10, 1924, being on "Health Unit Development in Boston"; the January 14 meeting on "Prenatal and Postnatal Care"; March 11, "Child Hygiene"; April 8, "School Child Health," and May 13, "Health of the Adult."

MICHIGAN

Chiropractor Guilty.—Blake D. Lewis, a chiropractor, charged with unlawfully practicing medicine, was found guilty, it is reported, in the circuit court at Flint, Dec. 16, 1924. Sentence was suspended until February 9 to allow for an appeal. The practice of chiropractic has been held by the Michigan Supreme Court to be the practice of medicine under the medical practice act of the state, which provides for licensing drugless healers of all kinds.

Society Establishes Telephone Exchange.—The Ingham County Medical Society, Lansing, announced, Dec. 18, 1924, the establishment of a free medical telephone exchange. Physicians are to inform the exchange when they are out of the city and denote what physician is to take their place; also on Sundays and holidays. The plans whereby it will be possible to keep in touch with some physician at all times were arranged through cooperation with the Sparrow and St. Lawrence hospitals.

MINNESOTA

Statement Concerning Smallpox.—The Minneapolis Board of Public Welfare issued a statement, Dec. 18, 1924, concerning the smallpox situation. It said, in part, that there had been in Minneapolis 911 cases of smallpox since Jan. 1, 1924, and 170 deaths. The Minneapolis Health Department had issued during the same period 194,084 smallpox vaccine tubes, and in addition at least 430,000 tubes had been sold to physicians. The statement adds that among the 76,000 school children there have been only eighty-one cases and two deaths, neither of the children who died having ever been vaccinated. It is reported that Dr. Claude C. Pierce, senior surgeon, U. S. Public Health Service, has been detailed to assist the health officers of St. Paul and Minneapolis to develop uniform regulations for the control of smallpox in those cities.

MISSOURI

Adcox Files Suit.—Dr. Robert Adcox, St. Louis, a prominent figure in the "diploma mill" scandal, whose license to practice medicine, it is reported, was revoked last October, and who is under bond on appeal from two years prison sentence for bribery, brought suit, Dec. 26, 1924, in the circuit court asking that the state board of health be compelled to certify the record of proceedings in which his license was revoked and present it to the court of review. Dr. Adcox alleges, according to reports, that the action was unwarranted, and that no legal evidence was presented to prove him "of bad character."

NEW JERSEY

Hospital News.—The Newark City Hospital, Newark, is building a convalescent hospital as an annex in South Orange, where patients who need little medical attention will be transferred. It is situated on a tract of 100 acres adjacent to the Newark City Almshouse, and will accommodate about 118 persons.

NEW MEXICO

Personal.—Dr. Franklin V. Walker, Mosquero, has been appointed health officer of Harding County to succeed Dr. Denna C. Daniel, now of Quay County.——Dr. Rufus F. Parks, full-time health officer of Eddy County, has resigned and will go to South America, about January 15.

NEW YORK

Visitors to Health Department.—During 1924, the state health department was visited by forty-three eminent health officers, eight of whom were members of the International Exchange Group under the auspices of the League of Nations. European, South American and several countries in the Far East were represented.

Tuberculosis Clinics.—The state department of health reports that, during 1924, 110 tuberculosis clinics were held in twenty-seven counties, at which 2,225 patients were examined, about 13 per cent. of whom were found to have active tuberculosis; 38 per cent. were negative, and the remainder were classified as suspicious or requiring further observation.

Typhoid Fever.—There was an increase for the week ending Dec. 20, 1924, in the amount of typhoid fever reported in the state, exclusive of New York City. Of the seventy-nine cases, twenty-seven occurred in Westchester County, nine in Rochester, five in Utica. The state department of health has been informed that a large part of the Westchester County patients had recently visited New York City.

New York City

Dr. Bates Expelled.—The New York County Medical Society, Dec. 22, 1924, expelled Dr. William H. Bates.

Ban on Shell Fish from Hempstead Bay.—Health Commissioner Dr. Frank J. Monaghan recently announced that a ban has been placed on the sale and distribution in this city of oysters from beds in Hempstead Bay. He explained that *Bacillus typhosus* had not been found in the oysters but that they are still under suspicion, and there are still being reported daily more than a score of new cases of typhoid fever.

The New College of Physicians and Surgeons.—It was announced, Dec. 13, 1924, that the new College of Physicians and Surgeons to be erected as a unit of the great medical center at One Hundred and Sixty-Eighth Street between Broadway and Riverside Drive, will be a fourteen story building. The medical school buildings will be connected by "a fourteen story axis" with the Presbyterian Hospital, the capacity of which will be 765 beds, the two institutions having a common lighting and heating service. The medical school building will cost $3,000,000, the funds having already been given by donations of $1,000,000 each by the Carnegie Foundation, the Rockefeller Foundation and the General Education Board. For the Presbyterian Hospital section, costing $7,000,000, a public campaign for $4,500,000 is being conducted.

Institute for Crippled and Disabled Men.—A gift of $200,000 from Jeremiah Milbank to the Institute was announced, Dec. 23, 1924, the income to be used in training seriously handicapped men to earn their living. Mr. Milbank, anticipating the effects of the World War in crippling soldiers and sailors, established this institution in 1917. Now permanently located at 245 East Twenty-Third Street, its scope has expanded from training crippled men alone to the production of artificial limbs, furnishing work to cripples who are unable to leave their homes and a free employment service. Eight hundred and forty men have been trained in its classes, their combined earnings being now more than a million dollars a year. Six hundred and fourteen cripples at home have been helped, and 1,885 artificial limbs and appliances manufactured.

More Venereal Disease Than Tuberculosis.—The Division of Venereal Diseases, U. S. Public Health Service, draws attention to the fact that out of 4,807 cases of infectious diseases in New York City in September, last year, 1,639 were cases of venereal diseases. According to the *Bulletin* of the Department of Health of New York City, this total was composed of 1,106 cases of syphilis and 533 cases of gonorrhea. Venereal diseases accounted for 34 per cent. of all the infectious cases. In spite of the fact that the cause, prevention and cure of venereal diseases are known, these combined maladies had a substantial lead over all forms of tuberculosis, for which there is no specific cure. The number of cases of tuberculosis was 820. While there were 1,639 cases of venereal diseases out of a total of 4,807 cases reported in September, 1924, there were in New York City 2,052 cases of syphilis and gonorrhea out of 4,650 cases in the corresponding month of the year 1923.

NORTH CAROLINA

Duke University.—Having decided to change its name to Duke University, Trinity College becomes a memorial to the Duke family, which for more than thirty years has been the chief supporter of that institution, its benefactions previous to the recent gift of Mr. James B. Duke amounting to more that $5,000,000. With the change of name there becomes available for improvements $6,000,000, and from previous plans an extensive building program will be started promptly to provide for schools connected with the university. The schools of medicine and engineering, however, are to be provided for from other funds. The university will be controlled by a board of trustees unhampered by restrictions save one, that the institution shall not contract debts at any time beyond its known and immediate income. The medical profession is represented on the board by Drs. Albert Anderson, Raleigh, and Joseph Howell Way, Waynesville.

NORTH DAKOTA

Admitted to Registration Area.—North Dakota has been admitted, it is reported, to both the birth and death divisions of the United States registration area.

OHIO

Personal.—Dr. Lindsly R. Williams, managing director, National Tuberculosis Association, will address the Cleveland Anti-Tuberculosis League, January 20, at the Hotel Statler.——Dr. John H. Quayle, Cleveland, sailed, Dec. 4, 1924, for a trip around the world.——Dr. Fred F. De Vore, Whitehouse, has been appointed county health commissioner of Lucas County.

Dr. Bachmeyer Appointed Dean.—At a special meeting of the board of trustees, University of Cincinnati, Dec. 23, 1924, Dr. Arthur C. Bachmeyer, superintendent, Cincinnati General Hospital, was appointed dean of the University of Cincinnati College of Medicine to succeed Dr. Henry Page. The appointment is to be effective, Sept. 1, 1925, at which time the leave of absence of Dr. Page ends. Dr. Bachmeyer, a native of Cincinnati, has been identified with the university for many years. He is the acting dean now and the president-elect of the American Hospital Association.

Society News.—At the annual meeting of the Sandusky County Medical Society, Fremont, Dec. 18, 1924, Dr. Sumner C. Sackett was elected president; Dr. C. M. Cooper, vice president; Dr. William H. Booth, treasurer, and Dr. James L. Curtin, secretary.——Dr. Richard N. Lee, Mount Blanchard, was elected president of the Hancock County Medical Society, Dec. 10, 1924; Dr. Oscar P. Klotz, Findlay, vice president; Dr. Earl J. Thomas, Findlay, secretary-treasurer.——At the annual meeting of the Washington County Medical Society, Dec. 22, 1924, Marietta, Dr. Stephen A. Cunningham was elected president; Dr. Charles A. Gallagher, vice president, and Dr. Charles A. Williams, secretary-treasurer.——At a meeting of the Summit County Medical Society at the People's Hospital, Akron, January 6, officers were installed and "The Progress of 1924" reviewed by five speakers, each considering a specialty. The society voted on an amendment to the by-laws which provides a salary of $40 per month for the secretary until an executive secretary is appointed.

TEXAS

Smallpox at Tyler.—It was reported, Dec. 24, 1924, that twenty-nine cases of smallpox had been notified to the city health officer at Tyler.

Annual Banquet.—The Navarro County Medical Society held its twenty-fifth annual banquet at the Country Club, Corsicana, Dec. 20, 1924. Dr. I. Newton Suttle, Corsicana, among others, gave an address.

Hospital News.—Deaf Smith County recently opened its new county hospital at Hereford. It is a brick and concrete structure with modern equipment and a maximum capacity of twenty-five beds.

County Health Unit.—Arrangements have been made whereby Falls County will have a whole-time county health unit during 1925. The city of Marlin will cooperate with the county commissioners in providing the funds. At present, there are five whole-time county health units in the state, it is reported.

VIRGINIA

Society News.—At a recent meeting of the Arlington County Medical Society, Dr. James H. Walton, Cherrydale, was elected president; Dr. Edward McCarthy, Cherrydale, vice president, and Dr. Benjamin H. Swain, Ballston, secretary-treasurer. A committee was appointed to revise the prices for medical attendance, so as to conform more to the prices charged by the Medical Society of the District of Columbia, and to publish the revised schedule in the county papers.

WISCONSIN

Hospital News.—The Misericordia Maternity Hospital, Milwaukee, which recently dedicated its $225,000 addition, is contemplating the construction of another building.——The board of county commissioners of Sheboygan County has let the contract for the construction of a county tuberculosis sanatorium costing $196,000 on a site recently purchased 3 miles north of Plymouth.

Child Workers Examined.—Milwaukee requires that every child which permanently enters industry must be given a physical examination, and when physical defects are found a permit to work is issued with the understanding that the defects will be corrected and that the child will report for reexamination. Of the 2,507 children of Milwaukee, who received permits for full-time employment during the year 1923-1924, only 18 per cent. were classed as free from physical defects.

PORTO RICO

Reciprocity with New York.—The *Bulletin* of the Porto Rico Medical Association announces that medical reciprocity has been arranged between Porto Rico and the state of New York, and credits Dr. D. A. Biscoechea, San Juan, with the successful conclusion of the negotiations.

GENERAL

Anniversary Number.—The January number of the *Journal of the Outdoor Life* commemorates the fortieth anniversary of the Trudeau Sanatorium, where the journal was founded in 1903. The frontispiece is a reproduction of the Trudeau Memorial, designed by Gutzon Borglum and erected by contributions from patients at the sanatorium. There are numerous articles by some of those who knew Trudeau well and many reprints of scenes at Saranac Lake then and now.

Funds for Refugees in Bulgaria.—The national headquarters of the American Red Cross has dispatched through the state department an appropriation of $10,000 to Sofia, Bulgaria, to help the Bulgarian Red Cross in caring for its returning nationals. The Bulgarian Red Cross during the last five years has assisted in the repatriation of more than 200,000 refugees who, under the terms of the peace treaty, have returned home from Serbia, Greece and Turkey. A sudden increase in this movement in the last two months practically exhausted the resources of the Bulgarian Red Cross.

Another Report on Chlorin Gas.—At a sectional meeting of the American Association for the Advancement of Science, Washington, D. C., Dec. 30, 1924, Dr. Henry J. Nichols, director, department of preventive medicine and clinical pathology, Army Medical School, submitted a preliminary report on the use of chlorin gas for the treatment of common colds and respiratory diseases, in which he said, it is reported, that it has been impossible to demonstrate any bactericidal action as a basis for this method, and that in nearly 500 cultures from about seventy-five persons, no evidence was found of any antiseptic action of chlorin gas as now used, either by the portable machine in a room or by the individual treatment machine.

American Chemical Society.—The election of Prof. James F. Norris, Ph.D., Massachusetts Institute of Technology, Boston, to be president of the American Chemical Society for 1925 has been announced. Prof. Edward C. Franklin, Ph.D., Stanford University, and Willard D. Bigelow, director, Research Laboratories, National Canners' Association, Washington, D. C., have been chosen directors. Professor Norris now holds the chair of organic chemistry at the Massachusetts Institute of Technology, and from 1916 to 1920 was professor of general chemistry. He is an assistant editor of the *Journal of the American Chemical Society*, and during the World War was an associate on the Naval Consulting Board and a lieutenant-colonel in the Chemical Warfare Service. The spring meeting of the American Chemical Society will be in Baltimore in April.

Science League of America.—This organization, formed four months ago to combat the efforts of fundamentalists in trying to drive the theory of evolution from the public schools and to inform the public of the facts of modern science, has already secured an extensive membership and has held a number of open meetings. The president, Maynard Shipley, will proceed promptly to organize southern and interior California in view of a notice given by the fundamentalists of that state that they propose to obtain a verdict at the ballot box for or against the theory of evolution. He will then extend the organization until the entire country has been covered. The Science League of America proposes, says Mr. Shipley, to acquaint the people with the facts on which the theory of evolution is based. The league is nonsectarian and nonpolitical, and its office is at 948 Market Street, San Francisco.

Trachoma Clinics for Indians.—A clinic for the purpose of instructing physicians in the Indian Service in the treatment of trachoma will be held at the Indian School Hospital, Albuquerque, N. M., from January 10 to January 20, 1925. The Department of the Interior has arranged to have Dr. L. Webster Fox, professor of ophthalmology, University of Pennsylvania Graduate School, and ophthalmic surgeon to the Medico-Chirurgical Hospital, Polyclinic Hospital and the Philadelphia Orthopedic Hospital, in charge. Dr. Fox has done research on trachoma in this country and in Europe, and during the last summer, held a trachoma clinic at the Blackfeet Hospital, in Montana, for the instruction of Indian Service physicians. Similar clinics by leading trachoma men of the Indian Service will be held later at central locations, so that practically every physician in the Indian Service will have an opportunity to observe the work developed at the Albuquerque demonstration.

Fatal Accidents in 1923.—The Department of Commerce announces that practically one-fifth of all fatal accidents in 1923 were the result of automobile accidents and that about twice as many deaths from automobile accidents occurred in urban as in rural districts. Only three states, Kentucky, Mississippi and Wyoming, had higher mortality rates from railroad accidents than from automobile accidents. The highest mortality rate from railroad accidents was 34 per hundred thousand in Wyoming, and the lowest 3.5 in Massachusetts. Wyoming had also the highest mortality rate from all kinds of accidents (195.4 per hundred thousand population), and Mississippi the lowest. California had the highest mortality rate from automobile accidents (32.6) and also from street car accidents (4.7), while Mississippi had the lowest rate from automobile accidents (4.4) and Wyoming had no deaths from street cars. Among the sixty-six cities of 100,000 population and over, for which rates are shown, Camden, N. J., had the highest mortality rate from automobile accidents (35.4), Buffalo the highest from street car accidents (8.9) and Scranton, Pa., the highest from railroad accidents (16.4) and also from all accidents (144.5). Duluth, Minn.; Jacksonville, Fla.; San Antonio, Texas, and Yonkers, N. J., had no deaths from street car accidents. New Bedford, Mass., had the lowest rate from automobile accidents (6.2) and Fort Worth, Texas, the lowest rate from all accidents (47.3). Particular attention in this announcement is called to the names of twenty-five cities of 15,000 population and over, in which no deaths from automobile accidents occurred. Six of these cities are located in Pennsylvania and three each in New Jersey and Rhode Island.

Society News.—At the recent annual meeting of the Southern Medical Association in New Orleans, a section on gastroenterology was authorized. This will take the place of the Southern Gastro-Enterological Association, which has been an affiliated organization of the Southern Medical Association.——At the annual meeting, White Sulphur Springs, W. Va., last November, of the Association of Surgeons of the Chesapeake and Ohio Railway, Dr. Leslie L. Bigelow, Columbus, Ohio, was elected president; and Drs. Robert J. Wilkinson, Huntington, W. Va., Eric R. Twachtman, Cincinnati, and Horace L. Goodman, McKendree, W. Va., vice presidents.——At the annual meeting of the American Association for the Advancement of Science, Washington, D. C., January 2, Prof. Michael I. Pupin, Ph.D., professor of physics, Columbia University, New York, was elected president; William J. Humphreys, Ph.D., U. S. Weather Bureau, general secretary for four years; Burton E. Livingston, Ph.D., Johns Hopkins University, reelected permanent secretary for four years, and John L. Wirt, Carnegie Institution, Washington, D. C., was elected treasurer.——The eastern section of the American Laryngological, Rhinological and Otological Society will hold its annual meeting in Boston, January 24. The morning

and afternoon sessions will be at Harvard Medical School, the former being devoted chiefly to "Headaches and Cranial Neuralgias," which six leading representatives from other medical specialties will discuss. The afternoon session will deal with "The Nonsurgical Treatment of Ear, Nose and Throat Diseases," discussed also from six different phases. The evening session will be held at Jordan Hall in conjunction with the Boston Section of the American Institute of Electrical Engineers. Eleven other scientific groups and societies, and the faculties of Harvard University, Massachusetts Institute of Technology, Boston University, Worcester Polytechnic Institute, Clark University and the New England Conservatory of Music will join in this meeting. The subject will be "Sound," and the chief speaker, Harvey Fletcher, head of the Bell System Laboratories of the Western Electric Company and the American Telephone and Telegraph Company. An elaborate apparatus will be installed which will permit the speaker to demonstrate the electrical analysis, amplification and control of sound, and to create artificially and arbitrarily selected forms of deafness so the audience may appreciate the handicaps which different types of deaf persons experience.

Bequests and Donations.—The following bequests and donations have been announced recently:

By the will of the late Robert E. Garner, $25,000, for the purpose of establishing a public hospital in the city of Anniston, Ala.

The Methodist Episcopal Hospital, Philadelphia, $10,000, from the Freund estate for the endowment of two beds; $5,000 from the Pennsylvania Auxiliary of the Naval Reserve Society for the endowment of one bed, and $5,000 from Mrs. J. A. Develin, to establish the James Aylward Develin Radium Foundation.

The Children's Memorial Hospital, Chicago, the residue of the estate of the late Miss Martha Wilson, estimated at more than $400,000.

To the building fund of the proposed Mary Immaculate Hospital, Jamaica, Long Island, a subscription of $50,000, by the Turf Aid Society.

The People's Hospital, Peru, Ill., $10,000, by the will of Mrs. Martha Merritt.

The Swedish-American Hospital, Rockford, $5,000, by the will of August Nilson, Rockford.

Pomona College, Claremont, Calif., $50,000, by A. P. Harwood, Upland, Calif., for the establishment of a memorial hospital. In its campaign for $2,000,000, Pomona College has received pledges for more than $800,000, thus assuring the gift of $400,000 by the General Education Board.

By the will of the late James Brown, the balance of the estate after the deduction of certain sums for relatives and employees, and $3,000 to the First Presbyterian Church Society of Boston, is divided equally among the Boston Floating Hospital, New England Peabody Home for Crippled Children, Industrial School for Crippled and Deformed Children, Boston Nursery for Blind Babies, the Scots' Charitable Society, New England Hospital for Women and Children, Home for Aged Women, Convalescent Home of the Children's Hospital, Boston Lying-In Hospital, Children's Department of the Boston Dispensary, Boston Home for Incurables, Children's Hospital, New England Home for Little Wanderers, Channing Home, Roxbury Home for Aged Women, Burnap Free Home for Aged Women, the Boston Children's Aid Society and the Summer Story Telling Department of the Museum of Fine Arts. The executors were required to give bonds of $1,400,000.

The Akron City Hospital, Akron, Ohio, $6,500, from Mr. and Mrs. A. B. Rinehart for deep therapy roentgen-ray equipment.

The appraisal of the estate of Thomas D. Hurd, New York, filed Dec. 19, 1924, includes ultimate bequests of $98,000, to the following charities: St. Giles Hospital, Brooklyn Association for Improving the Condition of the Poor, the Orphan Asylum Society of Brooklyn, Church Charity Foundation of Long Island, and the Brooklyn Society for the Prevention of Cruelty to Children; $10,000 each pass to the following organizations: Society for the Relief of the Ruptured and Crippled, Brooklyn Children's Aid Society, Faith Home for Incurables, Polytechnic Institute, Brooklyn Bureau of Charities, and Servants for Relief; $5,000 each go to the following charities: State Charity Aid Association, New York Association for Improving the Condition of the Poor, Brooklyn Hebrew Orphan Asylum, Tribune Fresh Air Fund, Brooklyn Home for the Blind, Crippled and Defective Children, Salvation Army, the Orthopedic Dispensary and Hospital in Manhattan, the Society of St. Johnland and the Brooklyn Institute of Arts and Sciences.

By the will of the late Henry Schaefer, Greenwich, Conn., revealing an estate amounting to about $1,150,000, following the widow's death, the residuary estate is to be divided as follows: To the Children's Aid Society, New York, two eighths; to the Lenox Hill Hospital, New York, one eighth; to the Knickerbocker Hospital, the Fifth Avenue Hospital and the St. John's Guild, all of New York, each one eighth; to the Greenwich General Hospital, one eighth, and to a sister and two brothers, each one twenty-fourth.

FOREIGN

International Radiology Congress.—The date proposed for this gathering at London is June 30, 1925. For further particulars, address the British Radiology Institute, 32 Welbeck Street, London.

Medical Research Council.—The Earl of Balfour and Mr. William Graham, M. P., have been appointed members of the Medical Research Council, England, to fill vacancies caused by the retirement of Mr. Edward Wood, M. P., and Mr. A. G. Church. Lord Balfour has accepted the chairmanship of the council.

Bergonié's Work and Martyrdom.—Among the works published by the late Prof. Jean A. Bergonié was his study of the elective effect of the roentgen rays on cells during karyokinesis and on spermatogonia. He introduced gages for roentgen-ray work, and the Bergonié-Tribondeau law has been of great aid in the treatment of cancer. His electrovibrator was invented to aid in locating projectiles in the tissues, and the creation of regional centers for research on and treatment of cancer was due to his initiative. His right shoulder was disarticulated a year or two ago, and the left arm amputated recently, on account of roentgen-ray injuries. He kept up his study of cancer to the very last. At the recent ceremony, when he was decorated with the grand cordon of the Legion of Honor in the presence of delegates from numerous scientific societies, he had to be brought into the hall on a litter. He died about three weeks later.

Deaths in Other Countries

Dr. **Jean A. Bergonié**, professor of biologic physics and medical electricity at the University of Bordeaux, a martyr to the roentgen rays.——The cable reports also the death of the chemist, **Demenitroux**, a victim to his research on radium rays in collaboration with the Curies.——Dr. **Ernst Bumm**, professor of gynecology and obstetrics at the University of Berlin, author of a standard manual on obstetrics and other works, aged 67.——Dr. **C. J. Salomonsen**, emeritus professor of pathology and bacteriology at the University of Copenhagen.—Dr. **Lozano y Ponce de León**, Madrid, author of works on pediatrics.——Dr. **Blocker de la Pola**, emeritus professor of the University of Valladolid.——Dr. **Gudmundur Magnusson**, professor of surgery at the University of Reykjavik, Iceland, aged 61.——Dr. **V. Schepelern**, for many years director of the Refsnae seashore sanatorium, the first in Denmark, aged 80.

CORRECTIONS

Orleans Parish Medical Society.—Dr. Urban Maes, New Orleans, was recently elected president of this society and not Dr. Maurice J. Gelpi as reported in THE JOURNAL, Dec. 27, 1924, p. 2101. Dr. Gelpi was elected first vice president.

Indian Medical Gazette.—In the index of articles appearing in the *Indian Medical Gazette*, May, 1924, published in THE JOURNAL, July 12, 1924, p. 153, an article written by Dr. John W. Tomb, chief sanitary officer of the Asansol Mines Board of Health, Bengal, India, was inadvertently omitted. It was entitled: "A Further Note on the Efficacy of the Essential Oils in the Prevention and Treatment of Cholera."

Dr. Talbot's Service as Chairman.—In the obituary of Dr. Eugene S. Talbot, published in THE JOURNAL, Dec. 27, 1924, an error occurred in the length of Dr. Talbot's service as secretary of the Section on Stomatology. He was elected secretary of the section, then known as the Section on Oral and Dental Surgery, at the St. Louis Session, in 1886, and served in that capacity until 1918, at which time he was elected chairman.

Government Services

Permanent Buildings for Army Medical Center

Legislation for the immediate construction of permanent fireproof buildings at the Army Medical Center, Walter Reed Hospital, Washington, D. C., is asked in a formal letter to Congress by Secretary of War John W. Weeks. The proposal includes provision for the construction of two wings containing wards to cost $1,421,000; dining rooms, kitchen wards and library, $300,000; tuberculosis, observation, infectious diseases and isolation wards, $1,000,000; laboratory and morgue building, $125,000. Secretary Weeks points out that the Walter Reed Hospital at present cares for one thousand patients, that the temporary wards in use now are rapidly deteriorating and the maintenance and upkeep are excessive, and that the present buildings are fire traps. The War Department Housing Program provides that the permanent improvements of Walter Reed Hospital will be paid for, in part, from funds derived from the sale of War Department property. The sum thus available will be $2,846,000. The proposed construction, therefore, will not be in the nature of a direct appropriation from the Treasury, but will anticipate the receipt of funds by the government from the sale of surplus War Department materials and property. The Veterans' Bureau, however, is to contribute $900,000 of the total construction. Secretary Weeks, in concluding his request, states: "to defer action toward the development of the Army Medical Center until such time as funds may be available from the Housing Program very probably would be an injury to this necessary project."

Foreign Letters

LONDON

(From Our Regular Correspondent)

Dec. 20, 1924.

Problem of Population of British Empire

In a letter to the *Times*, the bishop of Gloucester draws attention to the declining birth rate of the English stock, which, unless in some way corrected, must, he thinks, ultimately mean the failure of the empire. Once in eastern Canada there was a large English-speaking population in the province of Quebec, both rural and urban; now it has almost entirely disappeared and its place is taken by French-speaking Canadians, except in Montreal, an industrial center, where there is still an important minority of English and Scotch, a sort of financial aristocracy, and there are a considerable number of artisans, largely immigrants. The change is creeping westward into Ontario. In a few years there will hardly be an English village or community to the east of Ottawa. The reason for this change is quite simple. Whereas the French-Canadian is one of the most fertile of the races, the families numbering ten or twelve, sometimes as many as twenty the English have small families, sometimes no children at all. If no change occurs, the result will be inevitable. There are villages in the most fertile parts of Ontario where the number of children is so small that the school has been given up. Farther west, there are large districts peopled by foreigners, besides an increasing number of French-Canadians, and if the former may ultimately be assimilated, the latter never will be, for they preserve their language. At present the failure of the English race to multiply is to a certain extent made up for by immigration; but if the present tendency continues, the ultimate issue will be that the English-speaking people, through a large part of Canada, will be in the minority, and will therefore cease to populate the country. In the United States, the bishop finds the same danger. While other races increase rapidly, the American—that is, the English stock—increases slowly or not at all. It is in a minority in all the cities and towns of the New England coast, and this is due quite as much to the failure of birth rate as to immigration. In Maine, Vermont and New Hampshire, the French-Canadian is steadily invading the country. The American still has much of the wealth of the country and social prestige; he still governs the country; but how long will that last? He has the great advantage of unity of languages, but he has ceased to govern many of the cities.

Attention was recently drawn to the perilous position in the future of the white population of South Africa, which is stationary or almost so, while the black population, which is becoming civilized, is increasing rapidly. The remedy pointed out is increased white immigration. But the labor party, with a short-sighted policy, opposes this. In Australia the same concern exists as to whether the white population can maintain its ground against possible competitors. The bishop finds a similar decline in England, particularly in those sections of society which used to be the most healthy stock. When he visits a country parish he finds that the school has two thirds or half of the children it used to have. At the vicarage and the manor house, he finds small families or none where fifty years ago was a stock of healthy children.

The bishop admits that the causes of this decline of the birth rate are by no means simple. But he places first of all the "evil doctrine of birth control and conscious limitation of offspring." He characterizes this as biologically wrong, entailing the ultimate destruction of the race that adopts it and the making way by a superior race for one willing and able to increase and multiply. He appears to overlook the fact that a high birth rate is generally accompanied by a high infant death rate, which does something to redress the balance in favor of the people with a low birth rate. However, he is on surer ground when he states that there is a good deal of unconscious restriction of birth. He refers to the influence of civilization, with learning and many absorbing interests and pursuits in preventing marriage or apparently making marriage infertile. Then the Englishman demands more of life than other men. He is not content with continuing to cultivate the family farm; he wants to go out and seek more. This would be wise if the family were adequate; but with families so small it means that there is no one to cultivate the old farm, and it passes to another race. Lastly, the whole of modern legislation in this country seems designed to help the least fit to survive. A man with a sufficiently low standard of life finds the rearing of a large family easy. He has little or no taxation. The state educates and often feeds his children and provides them with medical assistance. When they are older, it keeps them if they do not want to work. The man need make no provision for old age. On the other hand, a man with a high standard of life and desirous of educating his children is heavily taxed, among other things, for the education of the children of the less efficient, while the cost of educating his own children is almost prohibitive. Naturally, he fears the burden of children and the country suffers. The British Empire has been created because this island sent out a vigorous and capable stock for colonization and commerce throughout the world. If that stock fails, the bishop holds that the empire will fail and give place to others.

Universal Donor of Blood

The hospital committee of Mile-End board of guardians announced having had under consideration a report by its medical superintendent that in cases of extreme urgency blood transfusion should take place, and for this purpose it was advisable that he should be able to call on a "universal donor" at a minute's notice, who would be prepared to present himself at the infirmary immediately when called on. The committee stated that such a person could be found, and the fee usually paid was $25 for each case of transfusion. The guardians adopted the recommendation of the committee that the medical superintendent be authorized to engage a man on those terms.

Dietary and Physique

Lieut.-Col. Robert McCarrison of the Indian Medical Service, an authority on tropical medicine, gave to the Indian Section of the Royal Society of Arts an account of his investigations, continued over many years in India, on food problems. He traced a close connection between the remarkable variations in the physical efficiency of the different races of India and their different dietary. The commonest and worst of all diets in use by Indians, he said, consisted of rice, legumes, vegetables and condiments. This diet was poor in protein, in mineral elements, and in certain vitamins. Its users, therefore, had the worst physique, the lowest powers of resistance to infection and the worst health of the races of India. Races, like the Rajputs, the Sikhs and the Pathans, who supplemented the diet with animal foods, especially milk and milk products, reached the highest degree of physical efficiency to be found in Oriental races, or, indeed, in any race of mankind. Comparisons between the food habits of our own people and those of Indian races were not always to our advantage. The diet in common use in this country, consisting of white bread, potatoes, muscle meat or canned meat, margarin and jam, was incapable of supporting normal

metabolism. We used far too many sophisticated foods. We resorted to white instead of whole-meal bread, just as the Indian used polished rice. It was folly to use a product, whether rice or wheat, that was deprived in the process of manufacture of food factors of vital need to the body.

Prof. H. E. Armstrong, a chemist, who was in the chair, said that the facts brought out by Dr. McCarrison were of immediate importance in connection with the inquiry to be instituted through an agricultural conference into our food policy. He looked with misgivings on suggestions that, to increase our wheat supply, the area devoted to pasturage should be reduced. The aim should be rather to improve the poor quality of our pasturage by the use of phosphates, and bring it up to the highest possible level of productiveness, thus improving the fresh milk and meat supply. The supply of the population with fresh vegetables at reasonable prices was a matter of primary importance.

CITY OF MEXICO

(From Our Regular Correspondent)

Dec. 15, 1924.

Smallpox and Measles

At Vera Cruz there has appeared a rather extensive outbreak of smallpox. There is some doubt as to the exact number of cases. At first only thirty-eight were mentioned. On the other hand, it is pointed out that if unreported cases are included, the figures might well reach into the neighborhood of 200. The local sanitary authorities have ordered the vaccination and revaccination of all inhabitants.

It is reported from Culiacán that measles has developed in an alarming form.

A Physician in the Cabinet

In the new cabinet, which assumed charge of affairs, Dec. 1, 1924, the portfolio of public education is held by Dr. J. Manuel Puig Casauranc, physician, newspaperman and poet. In previous times he was compelled to spend some time in New Mexico, for political reasons. People still remember his energetic action when in his capacity as a member of parliament he demanded an unbiased investigation in the case of another physician, Dr. Belisario Dominguez, a senator who had been murdered.

Personal

After representing Mexico in the Pan-American Sanitary Conference recently held in Havana, Dr. Alfonso Pruneda, former assistant director of public health, has returned to this country. Dr. Pruneda has just been appointed rector of the National University.——The Peruvian government has appointed Dr. Leoncio I. de Mora consul general to Mexico. On his arrival, he brought greetings from the Academy of Medicine of Lima, an organization of which he is a member, to the Mexican Academy.

Assault on a Professor

The oral examinations feature in the medical school, and the unappealable character of the examiners' decision, have occasionally caused trouble, as students who fail to pass are wont to protest, especially if they are high tempered. One case of this character has just happened. When a fifth year student was found disqualified in medical pathology, he assaulted one of the professors, causing the latter some injuries. The student was, of course, expelled immediately from the school.

Changes in the Public Health Department

Dr. Bernardo Gastélum has been appointed director of public health instead of Dr. Gabriel Malda, who had held this position for the last four years. The new director was secretary of education until two days ago, and has just published a book on gynecology. This was the subject taught by him in the medical school last year, and to which he has devoted himself since he began practicing in Culiacán, the capital of the state of Sinaloa.

Mr. Roberto Medellín, a pharmacist, has been appointed secretary of the public health department. This is the first time in the history of Mexican sanitary administration that a chemist has held this position. It is a fact that on a previous occasion a veterinarian acted as assistant director, but the secretaryship has always been in charge of a physician, more or less acquainted with public health matters.

BERLIN

(From Our Regular Correspondent)

Dec. 13, 1924.

Welfare Work Among Psychopaths

In connection with the recent convention in Heidelberg of the societies for the promotion of education among welfare subjects and for the advancement of juvenile courts in Germany, the Deutscher Verein zur Fürsorge für jugendliche Psychopathen held its third session in the interests of welfare work among psychopaths. Schneider of Cologne discussed the danger of psychopaths becoming moral delinquents owing to neglect and lack of supervision. He regards psychopaths as persons who are slightly different from the general run of individuals and who suffer under their abnormalities or cause society to suffer by reason thereof. In defining the term, he avoids referring to their condition as in any way related to mental disease, and, in the discussion that followed, this was the only conception that was advanced. Professor Stier of Berlin defined psychopathy as characterized by constitutional anomalies in the functioning of the emotions and the will, but emphasized that a predisposition to abnormality was not in itself a disease. Schneider distinguished the following types of psychopaths: Those affected with eretbism or excessive irritability, who are especially hard to educate because of the great difficulty of getting them to fix their attention on anything for any length of time, and if in addition they are feebleminded the prognosis in such cases is bad, notwithstanding the fact that relatives and friends often misinterpret their lively but superficial interest in affairs and are led to entertain false hopes with respect to them. These sanguine natures are often found among youthful prostitutes. Another class is made up of those with weak wills, who adapt themselves readily to any environment—also to the atmosphere of a training school for delinquents, but who, when allowed to shift for themselves, become a prey to prostitution and to any misdemeanors for which an opportunity is offered. However, Schneider has observed that members of this class sometimes mature more rapidly later and regards their prognosis as better than psychiatrists commonly assume, and more favorable than the position taken by Professor Raecke of Frankfort-on-the-Main would lead one to expect. Schneider emphasized that the chief difficulty in treating psychopaths who are subject to explosions or sudden and violent outbreaks is that the persons who have to deal with them are themselves too prone to allow their poise to be disturbed. Those who are discontented with their lot and seek admiration and attention awaken often by their loud talk the impression that they are sexually depraved, and from their inordinate desire to get into the limelight they are led to fantastic forms of deception and trickery. Their social prognosis is serious, as they constantly discover opportunities for practicing deception and causing trouble. Then there are the psychopaths who seem devoid of all human feeling. They often reveal their character in early childhood by their curelty to animals, their

destructive bent and their meanness toward younger brothers and sisters. Their prognosis is unfavorable, but Schneider refuses to accept the assumption of moral insanity.

Hahn of Frankfort-on-the-Main brought up some fundamental principles bearing on the question of psychopaths who seem to resist all attempts to educate them. He discussed earlier and more recent attempts to bring psychopathic traits in children into relation with pronounced forms of mental disease in adults. There is occasionally great similarity in the manifestations; and, when a psychopathic child has a family history of serious mental disease back of it, great difficulties may be experienced in the home, the school or the institution for the training of mentally defective children. They need a special training and education under medical supervision (children's department in hospitals; homes for the treatment and education of the mentally defective; departments for psychopaths difficult to educate, in the welfare training schools, under the management of psychiatrists). In dealing with children of this type, no matter how careful training may be given them, some will still go wrong. There are doubtless children born with antisocial instincts, but we cannot as yet be sure of recognizing them in their childhood, so as to know how fruitless all attempts at education, and especially welfare training, may be. Even though in a child's immediate family there may be many marked examples of unsocial qualities, it does not necessarily follow that the child will develop immoral and criminal tendencies. The bad qualities are not transmitted to the child, but only the *Anlage* or predisposition. The training and education of the child is made more difficult but is not necessarily hopeless. On the basis of observations on children affected with cerebral influenza, Hahn emphasized that character up to the time of puberty may undergo marked changes, whereas in adults and older juveniles this disease process exerts no particular influence on character. This gives in general a favorable outlook for the educational prospects of the child, but with increasing age the prospects become less favorable. Only a grave type of feeblemindedness or a decline accompanied by manifestations of incurable mental disease will make it impossible to prepare the child for some form of self-supporting activity. Manifestations of psychopathic inferiority necessitate a corresponding special training, or possibly the special type of welfare training, which is often the only means of getting children with bad hereditary tendencies away from dangerous surroundings that tend to develop moral depravity. For adults (and so far as the arrangements of welfare training are not sufficient, also for older juveniles) who are mentally and morally incapable of leading a free, independent existence, we need a law authorizing the authorities to place them under supervision. It is possible through the application of the *Entmündungsgesetz* to declare a person incapable of managing his property even though he be of age, and this law has sometimes been invoked in order to extend welfare training beyond the period of minority; but this does not suffice in case it becomes necessary to commit the person again to an institution.

Dr. Bondy of Göttingen and Dr. Paulssen, a woman physician of Hamburg, presented communications on the training of delinguent juveniles. Bondy started with the premise that there is a predisposition to delinquency even in what are usually termed normal children; it may not be a strong predisposition, but it is present. He therefore offered the suggestion that teachers in the regular schools should, for the sake of the experience, serve for at least one semester in the welfare training institutions, and that judges of the juvenile court should become familiar with welfare training work among juveniles through actual contact. In welfare training schools and in prisons for juveniles, it goes without saying that the pupils or inmates should be kept constantly employed, a demand which is, however, not carried out in all institutions. Bondy does not attach so much importance to the mere formation of habits of work. The boys must be taught to take pleasure in their work and to find delight in doing something that brings profit to the institution to which they belong. With agricultural work this is not difficult to accomplish. Later on, such work should be given a boy as he is adapted for and likes and which will help prepare him for a definite calling. Bondy holds that it is feasible to abolish the attitude of superiors toward inferiors, and to substitute self-government and a feeling of comradeship between leaders and pupils. He recommends this system, too, for prisons for juveniles where, according to his observations (in Hannöversand), the boys, for the most part, show, when they first arrive, a feeling of bitterness and unsatisfied longing, which is ill concealed by a bold or even impudent exterior. When the boys are dismissed from the institution, they should continue to be supervised by leaders who are only a few years older and have not lost touch with boys of juvenile age. Dr. Paulssen revealed the bad moral effect that state or federal regulation of prostitution had on the minds of juveniles. It seemed to her that such attempted control by the authorities awakened far and wide the feeling that sexual immorality was a matter of little importance from the ethical standpoint. She agreed with Bondy that the habit of work and the systematic division of time were aids, but only aids; they alone did not solve the problem. What the girls—especially those between 16 and 18 years old—most needed was sisterly guidance. She divided sexually delinquent girls into three types. The first type she designated the "*Abgeglittene*," or those who had slipped. They were not feebleminded, and if they had any psychopathic tendencies at all they were slight. On account of dissatisfaction with their work or their isolated life at home, they start on the down-hill road. They may even at times look like "professionals," but, in the bottom of their soul, they are not depraved. They do not require institutional training for a very long period. Supervision and association with youthful leaders and advisers will usually suffice. Next comes the infantile type, made up of young girls who have been allowed to go to work in the large cities before they have completed a common school course of education. In the nature of the case, they are not equal to the demands made on them in the metropolis, nor are they able to cope with the temptations of the city, for which reasons they easily fall a prey to prostitution. As a protective measure, special homes or girls' clubs under competent supervision should be provided for immature girls of this type, as soon as they come to the city. Once they have fallen into the mire, they should be placed in welfare training homes located in the rural districts, and should not be allowed to return to the large cities. True love as the experience of man's whole nature may remain a closed book to them, but it may be possible to awaken in their minds motherly instincts and the desire to care for their offspring. Finally, there is a third class composed of intelligent and strong-willed girls belonging to the common people who, because of a yearning for better social surroundings, have become estranged from their relatives and their old friends and have come to the city to find a more endurable existence. They often find themselves unable to overcome the great difficulties that they encounter and, as a last resort, prefer to serve as waitress in cafés where they are expected to entertain men rather than go into a home and serve as a maid of all work.

In the discussions it was universally recognized that the trained psychiatrist may be an aid or even indispensable in dealing with juvenile delinquents and deciding what disposition should be made of them.

JAPAN

(From Our Regular Correspondent)

Dec. 6, 1924.

Honor to Ludwig Aschoff

Prof. Dr. Ludwig Aschoff of Berlin University, who delivered lectures at several medical colleges in Japan this fall, has been elected honorary president of the Japan Pathological Association.

The Tropical Disease Association of the Far East

The date of the sixth session of the Tropical Disease Association of the Far East was announced for Oct. 18, 1925, to convene at Tokyo, under the chairmanship of Dr. Kitasato. This will be the first time that an international gathering of this kind has been held in Japan, and careful preparations are being made for its success.

Number of Medical Practitioners in Japan

According to statistics for 1923, given out by the department of home affairs, there are in Japan, excluding Korea and Formosa, 43,028 practitioners, or one for each 1,359 inhabitants. The excess of medical practitioners may, from the standpoint of the sanitary condition of the nation, be a matter of welcome. On the contrary, any deficiency of them would no doubt be a serious matter. The surplus practitioners in some cities, however, can hardly support themselves, and such a surplus is now an issue here. Part of the provincial distribution is as follows:

Name of Prefecture	Number of Practitioners	Inhabitants for One Practitioner
Okinawa (island)	171	3,491
Aomori	353	2,214
Yuwate	405	2,156
Hokkaido	1,657	1,639
Kanagawa (including Yokohama)	879	1,569
Hyogo (including Kobe)	1,681	1,453
Aichi	1,704	1,283
Nagasaki	921	1,276
Osaka	2,363	1,223
Kyoto	1,437	948
Tokyo	5,104	794

BUDAPEST

(From Our Regular Correspondent)

Dec. 9, 1924.

Confiscation of a Medical Book

Dr. Tivadar Huzella, professor on the medical faculty of the University of Debreczen, in 1923 published a book entitled "The War and Peace in Medical Illumination." Some days ago, Debreczen police officers entered every book store in the city and confiscated all copies of the book. This procedure had been ordered by the public prosecutor, who read the book and found that it contained agitation against the state and the social order, and was contrary to the law on the more intensive defense of the state and the social order. The prosecutor has made arrangements that the book shall also be confiscated in other cities and towns. Legal proceedings have been instituted against Professor Huzella himself.

University Professors Before the Disciplinary Commission

The disciplinary commission that was appointed some years ago to investigate the activity of some university professors during the bolshevist era has dealt several times with the cases of Dr. Karoly Hudovernig, university professor, director of the section for mental diseases in the St. John's Hospital in Budapest, and of Dr. Eugen Polya, lecturer on surgery at the Budapest University and senior physician to the Merchants' Hospital in Budapest. The former was indicted for having contributed, during the bolshevist rule in Hungary, to the requisition of the Bethesda Hospital and the private villa of Manfred Weiss for hospital purposes by the municipal council of the city of Budapest. The latter was charged with having been promoted to the rank of professor in ordinary during the bolshevist rule. The cases were decided some days ago after discussions lasting two days. The disciplinary commission has rebuked Professor Hudovernig, but he has the right to appeal against this sentence. As to Professor Polya, it was clearly confirmed that he accepted the appointment only under compulsion, and that he had not taken any step in order to promote his appointment and, on the other hand, he would have been appointed ordinarius even by the nonbolshevist rule, beacuse his scientific works rendered him fit for the chair. Therefore, he was unanimously acquitted.

Prevention of Gonorrheal Complications with Atropin

Dr. Louis Heiner, clinical assistant, says that the most inconvenient complication of gonorrhea in the male may be prevented by atropin. This is not his discovery, since Schindler of Germany suggested the application of atropin twenty years ago. Schindler started out with the assumption that gonococci are carried into the epididymis by the antiperistaltic movements of the ductus deferens. Dr. Heiner treated 226 cases of posterior urethritis. He classed these cases in four groups: 1. Cases in which the second portion of the urine was turbid, without other pathologic findings. There were 105 such cases. The patients received phenyl salicylate or hexamethylenamin as well as atropin. Local treatment was continued, with the exception of a few cases. Of the 105 cases epididymitis occurred in only two. 2. Cases in which there was very turbid urine, and moderate tumefaction and pain. There were eighty-one such cases, in all of which phenyl salicylate and atropin were administered. Epididymitis occurred in two cases. 3. In a group of twenty-two cases characterized by tenesmus with terminal hematuria, an atropin preparation was administered intramuscularly, in order to hasten its action. Two of the patients developed epididymitis. 4. Three patients with fully developed prostatitis developed epididymitis. Dr. Heiner remarks that he has seen good effects from atropin also with nongonorrheal cystitis, and also in cases of frequency of micturition, of nervous origin, with quite clear urine. As in general epididymitis occurs in at least 20 per cent. of cases of posterior gonorrhea, the incidence of nine cases of epididymitis out of 226 posterior gonorrhea cases must be attributed to the action of atropin.

Marriages

Seymour Jerome Cohen, Chicago, to Miss Sylvia Kaplan of Macon, Ga., at Chattanooga, Tenn., Dec. 3, 1924.

Joseph L. Wright, Harrisburg, Va., to Mrs. Anne Blackburn Hall of Roanoke, Nov. 22, 1924.

Homer J. Hall, Franklin, Ind., to Mrs. Alpharetta C. Terhune of Indianapolis, Dec. 18, 1924.

John Wesley Conrad to Miss Alice Matthews Heeber, both of Port Carbon, Pa., Dec. 11, 1924.

Benjamin W. Summy to Mrs. Lula Fagg Morgan, both of Washington, D. C., recently.

Michael F. Brondstetter, Mount Pleasant, Mich., to Miss Agnes Battle, Oct. 23, 1924.

Joseph T. Birkowitz to Miss Rebecca Garfinkel, both of Brooklyn, Nov. 30, 1924.

Rubin A. Gerber to Miss Shirley E. Topper, both of New York, Dec. 21, 1924.

Henry S. Stern to Miss Adele Lewit, both of Richmond, Va., Nov. 19, 1924.

Deaths

Marcus Haase ● professor of dermatology and syphilology, University of Tennessee College of Medicine, died at his home in Memphis, Dec. 15, 1924, of septicemia, aged 53. After graduating from the Memphis Hospital Medical College, 1893, Dr. Haase became a member of the Memphis Board of Health. He was placed in charge of a yellow fever epidemic in the Mississippi Valley by the U. S. Marine Hospital Service, then assigned to the study of yellow fever and other tropical diseases in British and Spanish Honduras. Dr. Haase remained in public health work until 1905, then went abroad to study dermatology, returning to Memphis to practice in that field until his death. He was for several years the secretary of the University of Tennessee College of Medicine and for ten years chairman of the medical board, Memphis General Hospital. He served in the army during the World War, and was several times president of the Memphis Council of Social Agencies. Dr. Haase was a member of the American Dermatological Association, and chairman of the Section on Dermatology and Syphilology of the American Medical Association, 1922-1923.

Alexander Leslie Blackwood ● Chicago; Hahnemann Medical College and Hospital, Chicago, 1888; member of the American College of Physicians; senior professor of materia medica and clinical medicine at his alma mater, 1899-1922; formerly vice president of the board of education; author of "Diseases of the Heart" and "A Manual of Materia Medica, Therapeutics and Pharmacology"; aged 62; died, Dec. 30, 1924, at the South Chicago Hospital, from the effects of a carbuncle and diabetes mellitus.

Otto Robert Eichel, Albany, N. Y.; University of Buffalo Department of Medicine, 1906; director of the division of vital statistics of the New York State Department of Health and chief of the epidemiological intelligence and statistics section of the League of Nations; fellow of the Royal Statistical Society of England; formerly superintendent of the J. N. Adam Memorial Hospital, Perrysburg; aged 41; died, Dec. 24, 1924, at Geneva, of pneumonia.

Russell Bradford Sprague ● Yarmouthport, Mass.; Tufts College Medical School, Boston, 1910; member of the New England Otological and Laryngological Society; formerly director of health and hygiene in the New Bedford Public Schools and medical director of the Cape Cod Health Bureau; at one time on the staff of the Foxboro (Mass.) State Hospital; aged 37; died, Dec. 21, 1924, at the Cape Cod Hospital, Hyannis, following a long illness.

William Knickerbocker Van Reypen ● Rear Admiral, U. S. Navy, retired, Washington, D. C.; Medical Department of the University of the City of New York, 1862; Civil War veteran; designor of the first ambulance ship used in naval warfare; surgeon general and chief of the bureau of medicine and surgery, 1897-1902; retired in 1902 after forty years' service; aged 84; died, Dec. 22, 1924.

Frank Nathaniel Whittier ● Brunswick, Me.; Medical School of Maine, Portland, 1889; formerly deputy dean and professor of pathology and bacteriology at his alma mater; member of the American Association of Pathologists and Bacteriologists, and the Society of American Bacteriologists; aged 63; died suddenly, Dec. 23, 1924.

William Dewey Alsever ● Syracuse, N. Y.; Syracuse University College of Medicine, 1900; member of the American Climatological and Clinical Association; professor of clinical medicine at his alma mater; served in the M. C., U. S. Army, with the rank of captain, during the World War; aged 49; died in December, 1924.

George de Bourboulon Watson, Edmonds, B. C.; L.R.C.P., Edinburgh, L.R.C.S., Edinburgh, L.F.P.S., Glasgow, 1884, and M.B., C.M., University of Edinburgh, 1885; for many years medical health officer of the Burnaby District; formerly police surgeon; aged 72; died, Oct. 24, 1924.

John Joseph Horgan, New York; University of Vermont College of Medicine, Burlington, 1911; served in the M. C., U. S. Army, with the rank of captain, during the World War; aged 38; died, Dec. 19, 1924, in a hospital at Worcester, Mass., following a long illness.

Lee Maxwell Nance ● Dallas, Texas; Baylor University College of Medicine, Dallas, 1910; associate professor of gynecology at his alma mater; on the staff of the Baylor Hospital; aged 51; died, Dec. 1, 1924, of cerebral hemorrhage.

John Norman Risley ● New Bedford, Mass.; University of Pennsylvania School of Medicine, Philadelphia, 1899; member of the American Ophthalmological Society; aged 48; died, Dec. 17, 1924, of pneumonia, following influenza.

Porter Robert McMaster ● Greenwich, N. Y.; Medical Department of Columbia College, New York, 1892; formerly on the staff of the Clifton Springs (N. Y.) Sanitarium; aged 59; died, Dec. 21, 1924, following a long illness.

John Slingsby Rookie, Chino, Calif.; Queen's University Faculty of Medicine, Kingston, Ont., Canada, 1902; died, Aug. 7, 1924, at Loma Linda (Calif.) Sanitarium and Hospital, of pernicious anemia and pneumonia.

James Adolphus Rice, Heathsville, Va.; University of Virginia Department of Medicine, Charlottesville, 1901; member of the Medical Society of Virginia; aged 58; died suddenly, Nov. 18, 1924, of cerebral hemorrhage.

Charles Omer Durham ● Indianapolis; Central College of Physicians and Surgeons, Indianapolis, 1892; county coroner for four years; aged 57; died, Dec. 18, 1924, at St. Vincent's Hospital, of cerebral hemorrhage.

William Tiffany Parks, Woodstock, Ont., Canada; University of Toronto Faculty of Medicine, 1877; Victoria University Medical Department, Toronto, 1880; aged 74; died, Oct. 23, 1924, of pneumonia.

William Edgar Gravely, Brodhead, Ky.; Louisville (Ky.) Medical College, 1896; member of the Kentucky State Medical Association; aged 62; died, Sept. 6, 1924, at a hospital in Louisville.

William Thomas Wilkins, Olive Branch, Miss.; Memphis (Tenn.) Hospital Medical College, 1882; member of the Mississippi State Medical Association; aged 66; died, Dec. 14, 1924.

Joseph William James ● Sacramento, Calif.; Cooper Medical College, San Francisco, 1900; on the staff of the Sutter Hospital, where he died, Dec. 11, 1924, of typhoid fever, aged 48.

Joseph J. Risk, Detroit; Lincoln (Neb.) Medical College, 1915; formerly mayor of Waverly, Neb., aged 39; died, Dec. 9, 1924, at the Grace Hospital, following an operation.

James A. Robertson, Stratford, Ont., Canada; Trinity Medical College, Toronto, 1875; for forty years medical health officer; aged 79; died, Nov. 4, 1924, of arteriosclerosis.

Winfield Blair Sharp, Atlanta, Ga.; Southern Medical College, Atlanta, 1894; member of the Medical Association of Georgia; aged 54, died, Dec. 10, 1924, of heart disease.

Charles Bruce Boyle, Hagerstown, Md.; University of Maryland School of Medicine, Baltimore, 1869; Confederate veteran; aged 84; died, Dec. 10, 1924, of senility.

James Alexander Cullom, Bonham, Texas; Vanderbilt University Medical Department, Nashville, Tenn., 1879; aged 68; died, Dec. 12, 1924, of cerebral hemorrhage.

John Harrison Gavin, Boston; Bellevue Hospital Medical College, New York, 1892; member of the Massachusetts Medical Society; aged 71; died, Dec. 9, 1924.

John Phillip Brown, Waynesboro, Pa.; Baltimore University School of Medicine, 1886; aged 68; died in December, 1924, of cerebral hemorrhage and pneumonia.

Howard Mitchell Pankey, Shawneetown, Ill.; Loyola University School of Medicine, Chicago, 1922; aged 28; died, Dec. 8, 1924, at Denver, of tuberculosis.

Thomas Ogden Weatherley, Allentown, Pa.; Jefferson Medical College of Philadelphia, 1880; aged 78; died, Aug. 22 1924, at Philadelphia, of pneumonia.

Jacob F. Force, Pasadena, Calif.; Albany (N. Y.) Medical College, 1871; formerly a practitioner in Minnesota; aged 81; died, Dec. 12, 1924.

William F. Peacock, Vidalia, Ga.; University of Georgia Medical Department, Augusta, 1885; aged 66; died, Dec. 7, 1924, of pneumonia.

James M. Rogers, Pikeville, Tenn.; University of Tennessee College of Medicine, Memphis, 1911; aged 50; died, Nov. 16, 1924.

William Thomas Miller, McKeesport, Pa. (licensed, Ohio, 1881); aged 70; died, Sept. 15, 1924, of cardio vascular disease.

David Wallace, Ottawa, Ont., Canada; Queen's University Faculty of Medicine, Kingston, 1881; aged 74; died, Nov. 19, 1924.

Sarah A. Spare, Philadelphia (licensed, Pennsylvania, 1882); aged 81; died, Sept. 12, 1924.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

MORE MISBRANDED NOSTRUMS

Abstracts of Recent Notices of Judgment Issued by the Bureau of Chemistry of the United States Department of Agriculture

Nervtone Tablets.—Some Nervtone Tablets shipped by A. F. Schambier, Manchester, N. H., to Rhode Island, in June, 1921, were declared misbranded. When analyzed by the Bureau of Chemistry, "Nervtone Tablets No. 1" were found to contain, in each tablet, approximately 1/60 grain of mercuric chlorid (bichlorid of mercury), 1/120 grain of strychnin sulphate, 1/100 grain of arsenic trioxid, and 3 grains of iron sulphate, together with aloes and cascara sagrada extract. "Nervtone Tablets No. 2" were found to contain, in each tablet, approximately 1/120 grain of strychnin sulphate together with belladonna extracts, cascara and aloes. This product was declared misbranded because the therapeutic claims were false and fraudulent, while the claim that the tablets contained no dangerous drug was false and misleading. The tablets were recommended for dyspepsia, rheumatism, indigestion, mental worry, all female complaints, liver and kidney troubles, etc. In May, 1924, judgment of condemnation and forfeiture was entered, and the court ordered that the product be destroyed.—[*Notice of Judgment No. 12389; issued, December, 1924.*]

Lafayette Pain Anodyne.—In September, 1923, a quantity of Lafayette Pain Anodyne was shipped by the Lafayette Co. from Berlin, N. H., to Rhode Island. When analyzed by the Bureau of Chemistry, Lafayette Pain Anodyne was found to consist essentially of spearmint and cassia oils, camphor, capsicum, alcohol and water. The preparation was recommended for the relief and cure of rheumatism, backache, stiff joints, neuralgia, sore throat, coughs, colic, diarrhoea, painful menstruation and burns. These therapeutic claims were declared false and fraudulent, and in May, 1924, judgment of forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 12398; issued, December, 1924.*]

COLODINE AND COLOBROMIDINE NOT ACCEPTED FOR N. N. R.

Report of the Council on Pharmacy and Chemistry

The report which follows explains that Colodine and Colobromidine are unacceptable for New and Nonofficial Remedies because (1) the statements made in regard to their chemical character are indefinite and misleading; (2) the statements of their pharmacologic and therapeutic action are misleading and unwarranted, and (3) the circular included with the trade package may lead to their ill-advised use by the public. When this report was sent to the Colloidal Laboratories which market the preparations, the firm submitted a reply. In this it was promised that the indirect advertisement to the public would be discontinued; a proposed revision of its advertising was submitted and further information in regard to the preparation of the products was sent. The proposed circular, however, still contained dangerously misleading therapeutic claims, and the information did not clear up the contradictory statements of composition. The Council, therefore, affirmed the rejection of Colodine and Colobromidine for conflict with Rules 1 and 6 and authorized publication of its report with this explanatory statement.

W. A. PUCKNER, Secretary.

Colodine and Colobromidine are products of the Colloidal Laboratories, Philadelphia. They are stated to be the invention of Harry J. Novack, M.D., Philadelphia, and the claims contained in the advertising are almost entirely taken from a publication by Dr. Novack (*N. Y. Med. Jour. and Med. Record*, Vol. 117, Jan. 17, 1923, p. 69), a reprint of which is used as advertising.

The nature and composition of Colodine and Colobromidine is not made clear by the Colloidal Laboratories. According to the label, the products contain, respectively, iodin and iodin and bromin in "colloidal form." On the other hand, in the information furnished the Council, it is stated for Colodine:

"*Preparation*:—Colodine is prepared from pure resublimed iodine by an electrochemical process whereby the iodin vapors during sublimation are fed through an oily medium until combination is effected. The result is neither an absorption product nor a solution but a chemical combination in which the iodin is held strongly enough to withstand decomposition by the digestive fluids and bases, yet loosely enough readily to give up its total iodine content where most needed after absorption."

What an electrochemical process has to do with the feeding of iodin vapors through an oily medium is puzzling; but it is clear that the product cannot contain "iodin in colloidal form." Novack expands slightly on the matter, with equal obscurity, with such statements as:

"Though they are not true colloids of these elements, they are colloidal forms truly compatible with the human body."

"In short, the iodin in Colodine is an allotropic form of iodin and therefore offers a new field of application."

It may be concluded from all this, that Colodine is an iodin-treated fat, the nature of which is kept secret; that it does *not* contain "iodin" in colloidal form, and that the iodized fat is "colloidal" only in the sense that all fats are "colloidal."

The statements made in regard to the character of Colobromidine are as vague as those made for Colodine. Colobromidine is stated to contain iodin 10 per cent. and bromin 20 per cent. and to be prepared from Colodine "by the addition of elementary bromin vapor until combination is effected by an electrochemical process."

The claims and statements made in regard to the *actions* of Colodine appear to be governed by imagination rather than by observation. They are assertions, many of which are unsupported by any data whatsoever, while others are backed by a few case histories, all apparently from the practice of the discoverer, and none controlled by independent observers.

General statements are made as to the rate of absorption, the distribution and the rate of excretion, but in the absence of details, these cannot be accepted. There occur such further statements as:

"Briefly, the cardinal points with reference to the action of Colodine are: First, antimicrobic. *a.* It bares the infectious bacteria by stripping chemically and otherwise the natural protective material or wall which the body in its defense has thrown around them. *b.* It sensitizes and weakens the bacteria, as previously mentioned but to a greater degree than do the salts of iodin. *c.* The leucocytes already stimulated by the Colodine and finding the former imperfect defense weakened or eaten away and activation of the germ nest beginning, are forced to fight, producing the typical Colodine reaction at site of infection, typical of an acute infection but with the balance usually in favor of the phagocytes and the body. Second, the lowered viscosity of the blood and dilatation of the superficial as well as deep capillaries, increasing metabolism, and aiding the first or antimicrobic action. Third, general eliminative action of excess salts, insoluble calcium, metabolic by-products as well as mercury, arsenic and lead. Fourth, general endocrine glandular stimulant and activator, equivalent, if not superior to that produced by glandular therapy."

No evidence whatever for these statements is adduced either in the information and advertising of the Colloidal Laboratories or in the paper of Novack. It is improbable that any observations have been made with Colodine on blood-viscosity, the tonus of the superficial or deep capillaries, the metabolism, the excretion of "excess bases," or the secretion or activation of endocrine or other glands. The claims are doubtless those of imaginative speculation.

The effects on "the normal individual, free from past or hidden present infection" are described as "mild general stimulation, Urine, saliva, respiratory and cardiac action are slightly increased. Continued medication gives a sense of well-being by gently stimulating metabolism in general and an increased feeling of warmth due to the increased amount of blood reaching the surface of the body." This, too, sounds like an account of a rather imaginary event.

The therapeutic claims advanced for Colodine cover all the conditions in which iodid medication has been employed, at

various times—and some additional ones. Some of the latter are not only unreasonable, but even dangerous. Among the more flagrant excesses of Colodine enthusiasm may be mentioned the indications:

"Hematuria caused by polypi in the bladder."
"Scarlet fever, shortens duration and prevents nephritis, arthritis and valvular heart disease."
"Epilepsy, especially where there is a history of an injury to head."

The statements and claims for Colodine are extended to Colobromidine with the addition that from the latter may also be obtained the "sedative action of pure bromin."

A circular included with the trade packages of Colodine and Colobromidine contains a long list of conditions and diseases in which Colodine has been used "with unusually good and often miraculous results"; these include tonsillar infections, rheumatic affections, pyorrhea alveolaris, abscesses, boils, carbuncles, acute and chronic gonorrheal infection, gonorrheal rheumatism and syphilis. It is also stated that the preparation is contraindicated in early pregnancy "as it may cause separation of the feebly attached ovum." Self-medication is made easy by a discussion of the dosage in "acute" and "chronic" conditions and suggestions for convenient methods of administration.

Colodine and Colobromidine are unacceptable for New and Nonofficial Remedies because (1) the statements made in regard to their chemical character are indefinite and misleading; (2) the statements of their pharmacologic and therapeutic action are misleading and unwarranted, and (3) the circular included with the trade packages may lead to their ill-advised use by the public.

Correspondence

MACFADDISM AND A STARVATION DEATH

To the Editor:—Because of the publicity which you have recently given the Bernarr Macfadden publications in *Hygeia*, I thought you would be interested in the particulars of a case recently coming to my attention.

Isaiah Badal died in Mercy Hospital, Dec. 5, 1924. The attending physician had been called only a few hours previous to death and had not made a diagnosis, and because of the history obtained from the friends of the deceased, reported it to this office for investigation. Necropsy (a report of which is herewith inclosed) showed that the man died of starvation; and investigation of the history of the case disclosed the following facts:

Isaiah Badal was a cook recently employed at the Great Northern Hotel in Chicago. He became interested in Bernarr Macfadden's publications, particularly physical culture magazines, and went down to New York to see Bernarr Macfadden in person. He was not ill but thought he was a little too heavy. He weighed about 170 pounds (77 kg.). Macfadden convinced him of the benefits to be derived from fasting, and sold him a copy of his book "Fasting for Health." Badal became enthusiastic on the subject, quoting Macfadden and his writings to his friends constantly. After his death, a number of the Macfadden books were found among his possessions.

Oct. 5, 1924, he started to fast and, so far as his friends observed, he never took a morsel of food after that day. When taken to the hospital, December 5, he was too weak to talk, but wrote a note which I inclose, saying, "I started to fast on October 5, 1924, Isaiah Badal." His friends brought me four photographs, which I enclose. These pictures he had had taken during the progress of his fast. The first shows him as he was at the beginning, a fine looking young Syrian. The second was taken approximately two weeks later, the third two weeks after that, and the last one two weeks before his death. The coroner's verdict was that—Isaiah died from starvation by fasting.

This case will help to disprove the common belief that if the teaching of the cults does no good, it will do no harm. Here is a Syrian, 28 years old, who, his cousin testifies under oath, was not sick, and who starved himself to death, through Bernarr Macfadden's arguments.

The photographs and the note are the property of his relatives and friends, and I have promised that they will be returned to them. I hope that they will be of interest to you and that you will return them to me, shortly.

EDWARD E. EVANS, M.D., Gary, Ind.
Coroner, Lake County.

[NOTE.—Following are the significant items in the postmortem record: Clinical Diagnosis: Starvation, tuberculous enteritis. Stomach and bowels empty and collapsed. Tuberculous lesions in ileum, hyperemic areas, caseous lymph glands; regional tuberculous lesions were young lesions. No regional fat except around heart.

The photographs show the steady loss of weight to the point at which the skin of the face appears tightly stretched over the bony framework.—ED.]

VARIATIONS IN BLOOD PRESSURE

To the Editor:—I have read with interest the article by Dr. V. C. Kinney on "Some Original Blood Pressure Observations" (THE JOURNAL, Nov. 1, 1924). Dr. Kinney's opening remarks about there being differences in the blood pressures on the two sides of the body are, however, liable to give the impression that he considers he is the discoverer of this fact. I therefore beg to point out that several years ago I published observations on the blood pressures in the two arms, showing that differences were very common, especially in unilateral conditions, and to these variations, when present, I gave the name of the "differential blood pressure sign." The results of 819 observations were published in the *Quarterly Journal of Medicine* (18:148-164 [Jan.] 1920), and a further series of 1,897 observations in the same journal (14:309-313 [July] 1921). These results have been confirmed by my brother D. R. J. Cyriax and others.

EDGAR F. CYRIAX, M.D., London, England.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

SOLUTIONS FOR CHLORIN INHALATIONS

To the Editor:—What solution is used in the commercial respirators to produce chlorin for inhalation? If this is common sodium chlorid, is the decomposition produced by electrolysis or heat generated by electricity? I have an idea for a chlorin inhaler that seems practical and an improvement over existing types.

H. M. FERGUSON, M.D., Morris, Ill.

ANSWER.—We have not had an opportunity to examine the various types of chlorin apparatus, and so are able to give only a general opinion. In some of the chlorin generators, the chlorin is generated from a hydrochloric acid solution by electrolysis. It is quite probable that sodium chlorid may be used by some manufacturers in place of hydrochloric acid. In other types of apparatus the chlorin is delivered either from a tank containing chlorin under high pressure, or from a cartridge.

SOMNOS

To the Editor:—Is the preparation by Parke, Davis & Co., known as Somnos purely a form of chloral put up in glycerin or other vehicle, or is there some chemical difference between the two as far as the hypnotic element is concerned?

W. F. PIKE, M.D., Twin Falls, Idaho.

ANSWER.—So far as we know, the firm of Parke, Davis & Company does not market a preparation called Somnos.

However, the H. K. Mulford Company markets such a preparation.

Somnos was investigated by the Council on Pharmacy and Chemistry in 1906. The committee that made the investigation was unable to find that Somnos was less toxic than hydrated chloral, or that it had a less depressing effect on temperature, respiration or circulation. On the contrary, the physiologic effects were indistinguishable from hydrated chloral.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALABAMA: Montgomery, Jan. 13. Chairman, Dr. S. W. Welch, Montgomery.

CALIFORNIA: Los Angeles, Feb. 9-12. Sec., Dr. C. B. Pinkham, 906 Forum Bldg., Sacramento.

DISTRICT OF COLUMBIA: Washington, Jan. 13-15. Sec., Dr. Edgar P. Copeland, 104 Stoneleigh Court, Washington.

HAWAII: Honolulu, Jan. 12. Sec., Dr. G. C. Milnor, 401 Beretania St., Honolulu.

INDIANA: Indianapolis, Jan. 13. Sec., Dr. W. T. Gott, 333 State House, Indianapolis.

KANSAS: Topeka, Feb. 10. Sec., Dr. Albert S. Ross, Sabetha.

NATIONAL BOARD OF MEDICAL EXAMINERS: Written examinations in Class A medical schools. Parts I and II, Feb. 18-20. All applications for this examination must be made on or before January 15. Sec., Dr. J. S. Bodman, 1600 Walnut St., Philadelphia.

NEW YORK: Albany, Buffalo, New York, Syracuse, Jan. 26-29. Chief, Mr. Herbert J. Hamilton, State Education Bldg., Albany.

OKLAHOMA: Oklahoma City, Jan. 13-14. Sec., Dr. J. M. Byrum, Shawnee.

PENNSYLVANIA: Philadelphia, Jan. 27-31. Pres., Dr. I. D. Metzger, 322 Aiken Ave., Pittsburgh.

SOUTH DAKOTA: Pierre, Jan. 20. Dir., Dr. H. R. Kenaston, Bonesteel.

VERMONT: Burlington, Feb. 10. Sec., Dr. W. Scott Nay, Underhill.

WASHINGTON: Olympia, Jan. 12. Sec., Mr. Wm. Melville, Olympia.

WISCONSIN: Madison, Jan. 13-15. Sec., Dr. Robert E. Flynn, 315 State Bank Bldg., La Crosse.

Connecticut July Homeopathic Examination

Dr. Edwin C. M. Hall, secretary, Connecticut Homeopathic Medical Examining Board, reports the written examination held at New Haven, July 8, 1924. The examination covered 7 subjects and included 70 questions. An average of 75 per cent. was required to pass. One candidate was examined and passed. One candidate was licensed by endorsement of credentials. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent.
New York Homeopathic Med. Coll. and Flower Hosp.	(1915)	77

ENDORSEMENT OF CREDENTIALS		
College	Year Grad.	Endorsement with
New York Homeo. Med. Coll. and Flower Hosp.	(1894)	New York

Maine July Examination

Dr. Adam P. Leighton, Jr., secretary, Maine Board of Registration of Medicine, reports the oral and written examination held at Augusta, July 15-16, 1924. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Thirty-one candidates were examined, all of whom passed. Three candidates were licensed by reciprocity. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent.
Medical School of Maine	(1881)	75
Johns Hopkins University	(1924)	83
Boston University	(1924, 2)	83, 84.3
Harvard University	(1922) 87, (1924, 1) 83,	83, 84
Tufts College Medical School	(1920) 76, (1922, 2) 77.6, (1924, 8) 81, 81, 82, 82, 82, 83, 83, 88	80,
University of Pennsylvania	(1919)	85
Laval University Faculty of Medicine	(1924)	78
McGill University Faculty of Medicine	(1918)	79,
	(1924, 6) 76.4, 78, 79.2, 82, 84.5, 87	
University of Montreal Medical Faculty	(1924)	75.6
University of Vienna, Austria	(1922)*	81.3
German University of Prague, Czechoslovakia	(1903)	76

LICENSED BY RECIPROCITY		
College	Year Grad.	Reciprocity with
College of Physicians and Surgeons, Baltimore	(1902)	Maryland
University of Pennsylvania	(1891)	Penna.
Woman's Medical College of Pennsylvania	(1916)	Penna.

* Graduation not verified by A. M. A.

Book Notices

FERTILITY AND STERILITY IN HUMAN MARRIAGES. By Edward Reynolds, M.D., and Donald Macomber, M.D. With a Section on the Determining Causes of Male Sterility. By Edward L. Young, Jr., M.D. Cloth. Price, $5 net. Pp. 285, with 17 illustrations. Philadelphia: W. B. Saunders Company, 1924.

This is comprehensive, well considered and readable. The estimate of a 10 per cent. sterility in all marriages, while seemingly high, is based on careful statistical studies. The importance of aspiration during orgasm is perhaps overemphasized, for there are many fertile marriages in which the female simulates participation. The discussion of partial developmental defects, as also the treatment recommended and condemned for acute anteflexion, is sound. The Wassermann test, recommended when examination raises the slightest suspicion of syphilis, would better be extended to all cases not obviously hopeless. The chapter on nonspecific infections is timely and properly emphasized, though repeated light office curettage of the cervical mucosa followed by iodophenol may be questioned because of the risk of stricture formation. To refer functional vaginismus to the professed expert in psychanalysis is a confession of failure by the gynecologist in the practice of his specialty. His control over patient and husband should in just this type of case give most satisfactory results. The section by Young on the determining causes of sterility in the male is a potent argument for the collaboration of the urologist in every sterility problem in which the semen is less than obviously normal. Chapters on relative infertility are based on research by the authors, and represent the biggest contribution to the general subject of sterility since the recognition of the fact that the male and the female are equally responsible. We read that we "must cease to think of any mating or of any individual as necessarily either fertile or sterile, and realize instead that the fertility of either an individual or a mating may vary in any degree between full fertility and absolute fertility." The action of defective diets and other depressing environmental conditions is beautifully shown. To quote again, "No surgery should be undertaken for the relief of a sterile marriage until the possibility of constitutionally reduced fertility has been fully investigated for both partners." The chapters on miscarriage, on one child sterility and on the prevention of sterility are uniformly good. The therapeutic value of the Rubin transuterine insufflation of the tubes, especially after salpingostomy, is properly emphasized, while its diagnostic value is understated. This enlightening and informative monograph on a common and little understood subject should be accessible to every general practitioner as well as gynecologists and obstetricians.

DIE ERKRANKUNGEN DES PANCREAS. Von Dr. O. Gross, A. O. Professor an der Universität Greifswald, und Dr. N. Guleke, O. ö. Professor und Direktor der Chirurgischen Universitätsklinik in Jena. Enzyklopaedie der Klinischen Medizin. Spezieller Teil. Paper. Price, $6.45. Pp. 383, with 66 illustrations. Berlin: Julius Springer, 1924.

This monograph on the pancreas is a portion of the Enzyklopedie der klinischen Medizin and completes the special part dealing with the diseases of the spleen, liver, bile passages and pancreas, which is contributed by H. Eppinger, O. Gross, N. Guleke, H. Hirschfeld and E. Ranzi. The volume presents a critical review of the present knowledge on this subject, from the standpoints of the internist and the surgeon. Gross contributes the chapters dealing with the medical phases, while the surgical chapters are contributed by Guleke. This tendency to have joint medical and surgical co-authorship is extremely desirable, as it prevents the view being too one-sided. The volume begins with the discussion of the anatomy and physiology of the pancreas, paying particular attention to its inner secretion, and then considers the various functional tests and roentgenologic findings in disease of the pancreas. Functional disturbances of the pancreatic secretion and anomalies of the organ are considered next. Acute pancreatitis is discussed at length. The author prefers the term acute necrosis of the pancreas. This chapter is contributed by Guleke, and is of exceptional merit. It presents a critical analysis of the clinical manifestations of the

condition, together with a careful consideration of the pathogenesis. Several pages are devoted to experiments by the author and other workers in an attempt to evaluate the various etiologic factors and the causes of death. In considering the clinical symptoms and course, Guleke points out that the onset is sudden, with terrific pain, severe enough to cause shock, and that it differs from gallbladder pain in that it is continuous, without exacerbations and remissions; that local tenderness is relatively slight; that abdominal rigidity is usually absent in the early stages, and that this absence of rigidity is of great value in the differential diagnosis. A palpable tender resistance or mass corresponding to the pancreas can often be felt on palpation, owing to the absence of rigidity. This is of the greatest diagnostic importance. Symptoms of incomplete ileus, associated with progressively increasing meteorism, are almost always present. Vomiting occurs regularly, and the vomitus often contains bile. Though frequently repeated, it is rarely large in amount. The pulse at the beginning of the attack is slow and quiet, and only later becomes gradually more rapid. It is unusual for the pulse to rise to 120 or 140 at the onset. One should not wait for the pulse to become rapid before resorting to operation. The temperature is usually subnormal at the outset, as the result of shock, but later rises gradually to a moderate height. Cyanosis and icterus are occasionally present, but are not characteristic. Sugar is found in the urine in some cases, approximately 14 per cent. This clinical picture, given by Guleke, differs from that often given in textbooks, but it is clear, definite and exact. This portion of the work, dealing with pancreatitis, should be read by all surgeons. The chapter ends with a full discussion of surgical treatment. Other chapters deal with acute and subacute purulent pancreatitis; pancreatic abscess; chronic pancreatitis; pancreatic stones; tuberculosis of the pancreas; syphilis of the pancreas, and bronze diabetes. Thirty pages are devoted to a consideration of cysts of the pancreas, including their operative treatment. The book ends with a consideration of benign and malignant tumors of the pancreas, and injuries of the pancreas, special attention being given to their surgical treatment. There is a full bibliography, covering thirty pages, and an excellent index. The book is of unusual interest, is beautifully printed, and is well illustrated.

La Sonda Duodenal. Algunas de sus aplicaciones clinicas. Por Heliodoro G. Mogena. Con un prologo del Dr. Juan Madinaveitia. Paper. Price, 6 pesetas. Pp. 115, with 25 illustrations. Madrid: Parcelso, 1924.

The author has modestly entitled his monograph, "Some Clinical Uses of the Duodenal Tube," limiting himself to those he has actually tried, and especially fractional analysis of gastric contents, bile drainage, and functional tests of the liver. He has, however, tried to make his review as complete as possible. The data presented are chiefly derived from American research workers, such as Einhorn, Lyon and Meltzer, and among the references a great many are to The Journal. In the light of present views held in this country as to the value of bile drainage, the author may seem unduly optimistic, and the same criticism applies to his discussion of liver tests and gastric analysis. Altogether, he has tried, however, to be fair and conservative in his statements. It is a pity more care was not shown in proofreading to avoid misspelling such names as those of Beaumont and Benedict.

Facial Surgery. By H. P. Pickerill, C.B.E., M.D., M.S., Surgeon-in-Charge of Facial and Jaw Department, Dunedin Hospital. With an Introduction by Sir W. Arbuthnot Lane, Bart., C.B., M.S. Cloth. Price, $6.50. Pp. 162, with 255 illustrations. New York: William Wood & Co., 1924.

No doubt the advances made for the alleviation of the condition of facial patients during the war have been utilized in the treatment of lesions of the face in civilian practice. The author has therefore divided up his treatise into three parts: Part I deals mainly with the principles, methods and technic of facial surgery; Part II takes up the application of these methods to war surgery, and Part III, mainly that type of work in civilian practice. The author does not attempt to develop the subject from the standpoint of a textbook, but considers only the points he has used and found satisfactory. The principles are presented in a concise and simple manner, as is most of the subject matter.

Medicolegal

Validity of Indictment and of Medical Practice Act

(State v. Morrison (W. Va.), 123 S. E. R. 678)

The Supreme Court of Appeals of West Virginia affirms a judgment overruling a demurrer to an indictment charging the defendant with practicing medicine and surgery without having a license so to do. According to the syllabus by the court, an indictment which charges that the defendant "without having first complied with Sections 9, 10 and 11 of Chapter 150 of the Code of West Virginia, governing the applicants and issuing certificates to practice medicine and surgery, in the state of West Virginia, and without having first obtained a state license so to do as required by the laws of the state of West Virginia, did unlawfully practice medicine and surgery as defined in Chapter 150, Section 8-A, Barnes' West Virginia Code Annotated, 1923" is not subject to demurrer because it does not point out the particular acts done by the defendant.

The court says that the main ground relied on in this case was that the statute is unconstitutional. It was contended that it is an arbitrary and unreasonable exercise of the police power of the state. Of course, it was not contended that the state cannot regulate the practice of medicine and surgery by requiring one who engages in such practice to obtain a license or certificate as evidence of his qualifications; nor was it contended that the state cannot prescribe such qualifications. But it was urged that the statute is unreasonable and arbitrary, because it prohibits the administration of the simplest remedies; that a mother cannot give her child any medicine, not even a simple home remedy; one cannot render first aid to the sick or injured, without violating the statute until one has procured a doctor's license or certificate. But this, the court thinks, is entirely at variance with the manifest object of the statute. It should receive a reasonable construction, and so construing it, it cannot be held to prohibit the acts mentioned.

It appeared from the briefs of counsel that the defendant was a chiropractor; that he was engaged in the practice of his profession, and was indicted for practicing medicine and surgery without having obtained a license so to do. This, however, did not appear from the indictment itself. The particular acts which the defendant did were not set forth in the indictment. What he did in the practice of his particular profession did not appear on the face of the pleading, and that was all this court could consider. It would be unfair both to the state and to the defendant for this court to determine, on a demurrer to this indictment, whether one who practices chiropractic practices medicine and surgery within the meaning of the sections under consideration. Suppose that the defendant had no qualifications of any kind or character; that he engaged in the practice of medicine and surgery; could it be said that the indictment was insufficient to cover such a case? The court thinks not. The court must take the indictment for what it says. The court is not called on to determine what particular acts constitute the practice of medicine and surgery. That question will be met when it arises.

Privilege Not Extended to Death Certificates

(State v. Flory (Iowa), 199 N. W. R. 303)

The Supreme Court of Iowa says that in this case, in which the defendant was charged with the murder of his wife by poisoning, the death certificate made out by a physician and forwarded to the state department of vital statistics gave the cause, of death as acute myocarditis. On the trial of the case, counsel for the defendant sought to crossexamine the physician, who was called as a witness for the state, as to the cause of death, and as a part of the cross-examination to introduce in evidence a certified copy of the death certificate made out by him, but was not permitted to do so. Later, the certified copy of the certificate was offered in evidence as a part of the defendant's case in chief, but it was again excluded,

this time on the objection of the county attorney that it was incompetent. The first ruling was clearly correct, but the latter ruling cannot be sustained. The physician was not examined in chief as to the cause of death, and hence this could not be made the subject of cross-examination; but the court does not agree with the contention that the certified copy of the certificate was inadmissible in evidence as violating the rule protecting privileged communications. The rule which protects privileged communications has no application to public records. The requirements of the law that a public record be kept could not be complied with if the privilege were extended thereto.

Society Proceedings

COMING MEETINGS

Middle Section of American Laryngological, Rhinological and Otological Society, Lafayette, Ind., Feb. 23. Dr. George F. Keiper, 14 North 6th Street, Lafayette, Ind., Chairman.

Southern Section of American Laryngological, Rhinological and Otological Society, Jacksonville, Fla., Jan. 19. Dr. H. Marshall Taylor, 111 West Adams St., Jacksonville, Chairman.

SOUTHERN SURGICAL ASSOCIATION

Thirty-Seventh Annual Meeting, held at Charleston, S. C., Dec. 9-11, 1924

The President, Dr. LeGrand Guerry, Columbia, S. C., in the Chair

Importance of Sims' Position in Gynecology

Dr. Southgate Leigh, Norfolk, Va.: In order to get some idea of the present opinion of the profession, we recently sent a questionnaire to the members of the two national gynecologic societies asking for information regarding Sims' position and Sims' speculum. Of 134 who replied, only thirty-three are using the position regularly in examination and treatment; thirty-one have never used it; sixty-four use it either occasionally or rarely, and six formerly used the position but have given it up. A similar questionnaire addressed to professors of gynecology in Class A medical schools brought thirty-seven replies. Of these, six do not recommend the position, thirteen use it rarely, ten use it occasionally, and six advocate it. There is but one conclusion to draw from these replies and that is that Sims' position has practically been discarded by gynecologists and is hardly taught in the colleges. There are a number of reasons for such a radical change. Minor gynecology is much neglected by the gynecologist, who thinks more of major surgery than of the lesser affections. Surgeons have purposely given up Sims' position in operative work, the lithotomy position being more convenient and satisfactory; but in making this change they have apparently lost sight of the great advantage of Sims' position in examinations and treatments. Cancer of the uterus offers the most serious problem because of the difficulty of persuading women to be examined. Here is where Sims' position has one of its greatest fields of helpfulness. A full and satisfactory inspection of the genito-urinary tract may be made, with but little discomfort to the patient. Various forms of treatment may be used in this position, and many of the minor operations. It seems that but little attention is being paid to teaching the students practical gynecology, and very few young men are able to make a correct vaginal examination and report.

Pneumoperitoneum as Aid in Diagnosis of Obscure Pelvic Lesions and Early Pregnancy

Dr. Lucius E. Burch, Nashville, Tenn.: Inflation of the peritoneum by either the abdominal or the uterine route is perfectly safe, provided the contraindications are remembered and carried out. It is almost free from pain if the patient is kept in the knee-chest or Trendelenburg posture during the inflation and for fifteen minutes afterward. It is of the greatest aid in obscure pelvic cases, and will make an accurate diagnosis possible. Pregnancy in the early weeks can be diagnosed with certainty.

Superfetation

Dr. John M. Maury, Memphis, Tenn.: My specimen was removed post mortem from a colored woman, aged 35, who died from pulmonary tuberculosis. The uterus contained a well formed fetus, and a much smaller embryo was found in the left fallopian tube. The larger of the two offspring measured, crown-rump length, 90 mm., without straightening or moving the head from its natural position; the crown-heel length was 147 mm. The age of this fetus was probably 13 or 14 weeks. The tubal embryo measured 11 mm. in its greater length, which, according to the table of Felix, indicates an age of 6 weeks.

Treatment of Chronic Cervicitis

Dr. Charles R. Robins, Richmond, Va.: The principle of the treatment advocated is the application of a low degree of heat to the cervix long enough to raise the temperature of the entire cervix to a point at which it will be sterilized thoroughly and all germs destroyed. Any type of cautery may be used, but I usually employ the electric cautery. The blade of the cautery, at a dull red heat, is introduced into the cervical canal and pressed against the inner cervical walls from place to place until the entire cervix is heated through and through. All nabothian cysts that may be detected are destroyed by direct cauterization. The heat is applied in this manner for fifteen or twenty minutes. Care must be used that there is a free exit along the cautery for any vapors that may arise, as it is possible for vapor to enter the cavity of the uterus and be forced into the abdomen through the tubes. There is usually a superficial necrosis of tissue. This separates after about a week or ten days, and following this the enlarged, hard, boggy, indurated cervix becomes soft and pliable and returns to its normal size, and the thick mucopurulent discharge disappears. It becomes a question whether an operation is really indicated even in cases of laceration, but I believe that all lacerations should be repaired to prevent further trouble. The number of cases treated have been sufficient to give great confidence in this method.

Three Types of Ureteral Stricture

Dr. Edward H. Richardson, Baltimore: The first case was of traumatic origin and was complicated by a ureterovaginal fistula, but the kidney was saved by successfully combining a plastic operation with proper dilation of the stricture area. The second case illustrates the common type of inflammatory stricture in aggravated form, involving the lower ureteral segments and presenting the interesting clinical picture of recurrent attacks of renal colic, with hematuria on the side, with scarcely perceptible damage to the urinary tract. Cure was effected by proper dilation of the stricture areas. The third case illustrates, in addition to an interesting congenital anomaly, an inflammatory stricture at the uteropelvic junction, which led to the formation and incarceration of a ureteral calculus and associated pathologic changes requiring nephrectomy.

Roentgenographic Evidence of Association of Ureteral Stricture and Urinary Calculi

Dr. Guy L. Hunner, Baltimore: I have studied about 200 patients presenting stone in the upper urinary tract. The presence of calculus in the kidney or ureter is presumptive evidence of a coexistent ureteral stricture. Ureteral stricture is probably of blood-borne origin and, as one would anticipate under such circumstances, it is practically always of bilateral occurrence. The symptoms and many of the pathologic changes formerly ascribed to the presence of a stone are probably more often caused by stasis due to the coexistent stricture. Accepting these postulates, we are aided in the explanation of such phenomena as those presented by "silent" stone, "renorenal reflex," bilateral stone, frequent recurrence of stone on the side operated on, and frequent development of stone on the opposite side, the recurrence of symptoms soon after operation, the persistence of a sinus after operation, the problem of emergency operations, the problems of ureteral and renal calculus in the aged, operations for sup-

posed ureteral stones that cannot be found, and the phenomenon of migrating stone. In most cases, roentgenographic evidence of a calculus in the upper urinary tract is no longer the signal for an immediate operation. It is a sign that the surgeon has an intricate drainage problem requiring careful study of the bilateral upper urinary tract, with special reference to the condition of the ureter, and that the ureteral pathologic condition may, in turn, demand an investigation of the focal infection problem.

Examination of Fresh Tissue and Necropsy Service in Relation to Surgery

Dr. Louis B. Wilson, Rochester, Minn.: The examination of fresh tissues during the progress of the operation is of almost as great value for the information it gives the surgeon concerning the nature of chronic inflammatory processes, especially of tuberculosis, as it is in relation to malignant processes. In making the selection of cases in which he feels the necessity for pathologic diagnosis, the surgeon needs to exercise excellent judgment of gross pathologic conditions. In this he can be greatly assisted by the pathologist. He must bear in mind that while the pathologist's positive diagnosis is final, the value of his negative report must be judged by the surgeon's own judgment of the accuracy with which he has selected the sample of tissue on which the report has been made. We must have a greatly increased percentage of necropsies in the United States if we are to have our vital statistics placed on a par with, for example, those of England. But the accurate determination of the cause of death is, to the physician and surgeon, a relatively unimportant function of the necropsy. If the surgeon is to improve his diagnostic and operative judgment, he must seek to acquaint himself with all the reasons why the patient died, and his only hope is by a careful postmortem examination. His judgment at the operating table, quite as much as his judgment in diagnosis, is ripened more by his errors than by his successes, provided he is willing and anxious to study his errors post mortem. In all cases in which more than one physician has seen the patient before death or in which a pathologist who has not also been the examining or operating surgeon is concerned, there is nothing which can take the place of the clinicopathologic conference. This should be held as soon as possible after the tissues have been prepared and examined microscopically. In hospitals in which numerous necropsies are made, such a conference should be held at least once a week. All physicians on the staff should be present, and the meeting should not be open to visitors. A very satisfactory way is to present by means of lantern slides a brief abstract of the history of the case, a summary of pathologic findings, and a demonstration of gross specimens and microscopic slides.

Accessory Hepatic Lobe Springing from Surface of Gallbladder

Dr. Thomas S. Cullen, Baltimore: In this case, a perfect little liver 12 by 7 by 3.5 mm. sprang from the surface of the gallbladder and was attached to it by a delicate mesentery in which ran a branch of the portal vein, a branch of the hepatic vein, a branch of the hepatic artery and the bile duct. Serial sections of this miniature liver were made and were found to contain many vacuoles and much pigment. The liver cells in some places presented a most unusual picture, tending to form single rows and arranged in such a manner that the picture strongly suggested renal tubules. This is the third case on record.

Sacral Teratomas

Dr. J. Knox Simpson, Jacksonville, Fla.: Occupying the greater part of the left buttock of my patient and extending across the lower part of the sacrum to the right was a dumbbell shaped mass, the left extremity of which was the size of a large orange, and the right the size of a hen's egg. There was an isthmus crossing the posterior aspect of the sacrum at about the junction with the coccyx, 1 inch in diameter, and containing several hard, isolated islands. The mass on the left side extended below the tip of the coccyx. The anus opened to one side of the mass in about the normal relation to the buttock, and to the external genitalia. High up in the crease between the buttocks was a small dimple which gave the appearance of a pilonidal cyst. The mass did not increase in size or density when the child cried or coughed, and as nearly as could be determined did not transmit light. Roentgen-ray examination showed a normal spine, sacrum and coccyx, a normal rectum and sigmoid, with the rectum occupying a position anterior to the growth. No teeth or other calcified areas appeared in the growth. Operation was advised, and was performed under local anesthesia. The larger, left side mass was easily enucleated, as it occupied a position directly under the skin. The isthmus was attached to the periostium of the posterior aspect of the sacrum. The right extremity of the mass was extremely difficult to remove, as it extended by a constricted neck through the gluteus maximus muscle, and ended in a multilocular cystic mass occupying an intrapelvic position. The intrapelvic portion had burrowed upward and made a place for itself in the hollow of the sacrum, going through the gluteus maximus and partly through the levator ani muscles. The wound was closed and sealed with collodion, and primary union occurred. Dr. James Ewing reported that the growth was a rather typical sacral teratoma or embryoma, mainly adult in type, containing intestinal tract, cartilage, fat tissue and central nervous tissue. The child is well to date.

Stab Wound of Heart; Successful Suture

Dr. Robert L. Rhodes, Augusta, Ga.: A colored youth, aged 16, picked up unconscious in the street, had been injured about an hour and a half before, so far as we could ascertain. He had a small stab wound through the fourth interspace of the left chest, about 1 inch from the sternum. Under light ether anesthesia, the stab wound was enlarged. The knife blade had severed the fifth costal cartilage and passed on through the pleura, pericardium, the right ventricle and the posterior pericardium. The anterior wound of the ventricle was about 1½ inches long, the posterior about three-fourths inch long. The pericardium was filled with blood and clot, as was the left pleural cavity. The apex of the heart was quickly delivered; the heart was beating very rapidly, and a steady stream of blood poured out from each wound. Five silk sutures were placed in the anterior and three in the posterior wound, thus controlling the hemorrhage, but the heart ceased to beat because of excessive loss of blood. An effort was made to renew the heart action by massage, but without response. An injection of salt solution with epinephrin was given directly into the cavity of the left ventricle, which restored action for a few minutes, but it gradually weakened, ceased and could not be revived. A second man, colored, aged 23, was admitted to the hospital about fifteen minutes after having been stabbed in the left chest with a scissors blade. He was semidelirious, bathed in a cold perspiration, and restless, with feeble and at times imperceptible pulse. Blood pressure was 90 systolic and 60 diastolic. There was a perforating wound, one-half inch in length, in the left third interspace just beside the sternum, which was not bleeding. There was a small skin puncture just in front of the left shoulder where the point of the other blade of the scissors struck. Cardiac dulness was increased about 2 inches to the right of the sternum, and extended to about 1 inch outside the left nipple. Under ether anesthesia, about one hour from the time of injury, a semilunar incision was made along the left border of the sternum over the third, fourth and fifth ribs. Exposure of the fourth costochondral cartilage showed that the puncture was through its upper border. The left pleura and mesial border of the left lung were punctured, and clotted and fluid blood escaped from the chest. The lung collapsed with the opening of the pleura, which controlled the bleeding from the lung and suture was unnecessary. The puncture into the pericardium was behind the sternum, into the right auricle. An effort was made to place a suture through the pericardium into the auricle, but the latter could not be grasped or caught with the needle. The pericardium was then opened by an incision parallel with the sternum, and a large clot was evacuated. The force of the heart improved, and the rate increased at once. The wound in the right auricle, one-half inch long, came into view with rotation of the heart during each systole and disappeared during diastole.

There was continuous bleeding from the wound. The edges were clamped with Allis clamps; the heart was grasped with the hand and displaced backward and to the left, to permit the placing of No. 00 chromic catgut sutures. After the first suture had been placed it was drawn taut, the opening plugged with the finger, and the auricle permitted to recover from the fibrillation and reestablish its rhythm, and the suture was then tied. This method was repeated with each of the five sutures. In placing the fourth suture, the needle impinged against the sternum and a very small tear was made, through which a little leakage occurred after the suture was tied, necessitating a fifth suture to control the bleeding absolutely. Efforts had been made to give salt solution intravenously, but this was impossible because of the collapsed state of the veins. A needle was plunged into the left ventricle, and between 200 and 250 c.c. of salt solution was injected. The heart action promptly improved, when the ventricular infusion was discontinued. After watching the heart to be certain of its behavior, the pericardium was closed with a continuous suture of plain catgut, pleura, muscles and periosteum being united in layers with several interrupted sutures. The condition of the patient at the completion of the operation was good. The patient has worked as a day laborer for a year, and has had no handicap whatever.

Treatment of Burns

DR. A. MURAT WILLIS, Richmond, Va.: After severe superficial burns, there occurs a progressive decrease in the blood pressure exactly as in animals suffering from secondary traumatic shock. Changes in the composition of the blood identical in nature are produced in both these conditions. The excellent results that have been reported after the employment of débridement in the prevention and alleviation of traumatic shock are paralleled by similar results following the excision of burned areas, rendering it probable that in both cases the benefit is due to the prevention or diminution of entrance of a toxin in the injured area into the circulation. Not only is the toxemia of burns lessened or prevented by excision of the burned area, but local healing is much accelerated. The principle of excision has been applied in a number of clinical cases. In others in which the burns were not so severe or were infected, I have given the patient an anesthetic and with scrubbing brushes removed the necrotic, infected tissue, and then painted the surface with 2 per cent. solution of mercurochrome-220 soluble.

Postoperative Dilatation of the Stomach

DR. FRANCIS REDER, St. Louis: My experience with postoperative paralytic ileus has been so unfortunate that I cannot help harboring a feeling of apprehension in contemplating a surgical attack for an acute gastric dilatation. It appears that in the early cases life may be saved by siphonage. In those cases in which the condition has not been recognized early, I entertain the greatest doubt as to the value of any surgical treatment. The patient usually is in such severe shock that an operation would necessarily increase this condition. There apparently are some cases which present certain indications for operative intervention which are at least theoretically logical, but the mortality when an operative measure was undertaken by most excellent surgeons has been so high (85 per cent.) that one cannot help feeling that the condition is not one for operation.

Absorption in Intestinal Obstruction: Intra-Intestinal Pressure as a Factor

DRS. HARVEY B. STONE and WARFIELD M. FIROR, Baltimore: The view we advance comprehends distention as an important element in the absorption of toxins, not because it leads to vascular disturbances and subsequent necrosis, but because it is a form of increased intra-intestinal pressure. Even without gross distention, great pressure may exist within obstructed loops. This would explain the cases of dogs dying of obstruction in which loops are found that are neither distended nor necrotic. These cases are the exception. Distention is no doubt a most important factor in producing pressure. The mucosa may be thought of as a membrane permeable under the conditions of normal digestion to water, salt, certain carbohydrates and the split products of the digestion of fats and proteins. However, the membrane is not working under normal conditions when obstruction occurs. The toxic substances accumulate in much greater concentration under much greater pressure and for much longer periods of time than occurs normally. It is sound theory that a membrane may become permeable under such conditions to the passage of substances which, lacking such pressure, concentration and time conditions, would not pass through it. This idea would exclude the necessity for assuming any circulatory disturbance or tissue necrosis as at all essential to absorption, though such incidents may occur and may perhaps increase the rate of absorption.

Diverticulum of Appendix

DR. BATTLE MALONE, Memphis, Tenn.: My patient had true congenital diverticulum of the appendix. He had had numerous attacks of appendicitis for six years. He was operated on eleven hours after the onset of the last attack, and the appendix was removed. About the middle of the appendix, opposite the meso-appendix, was a diverticulum about the size of the appendix, extending downward to about the same length. The diverticulum had a slightly larger lumen than the appendix. Its wall was made up of the same layers of tissue as the appendix, and showed the same inflammatory changes found in the appendix.

Venoclysis: Intravenous Nutrition

DR. GEORGE A. HENDON, Louisville, Ky.: A man weighing 70 kg., when resting quietly in bed, may receive and utilize 63 gm. of glucose by vein per hour without glycosuria. He then receives 252 calories an hour, or 6,048 calories a day. If his resting requirement is 3,000 calories a day, he could thus receive double what he needed, or enough to cover the caloric expenditure of the same man during heavy physical exertion. Intravenous nutrition with glucose is thus proved to be a feasible clinical proposition. I have employed this method in two cases with remarkably successful results. The venous pressure is determined at the beginning of the infusion, at the end of the first and second half hours and then every hour as long as the infusion is continued. In the majority of cases it remains practically unchanged, but in shock it occasionally falls.

Treatment of Phlebitis by Intravenous Injection of Gentian Violet Solution

DR. WILLIAM F. SHALLENBERGER, Atlanta, Ga.: The interesting observations made in eleven cases of phlebitis treated by the intravenous injection of gentian violet solution is the prompt relief of pain, the rapid subsidence of edema, and the absence of permanent disability in all of these patients. It is true that phlebitis is a self-limited disease, but it often drags on for weeks and is followed by more or less permanent disability in about 50 per cent. of the cases. We have found 1 per cent. gentian violet solution too strong. It causes thrombosis in the vein at and above the site of injection. We use a 0.5 per cent. solution and give double the amount. The gentian violet crystals are dissolved in sterile, freshly distilled water, and the solution is filtered and injected. The maximum is 5 mg. per kilogram of body weight. This is 46 c.c. of a 0.5 per cent. solution for each 100 pounds. We have had no severe reactions. Some patients become nervous and complain of slight tightness in the chest. Sweating is commonly noted. The patient usually is more or less cyanotic for ten or fifteen minutes. The temperature often rises somewhat after the injection and then falls. The leukocytes fall with the drop in temperature and there is sometimes a marked relative increase in lymphocytes, both large and small. In two instances a small amount of the solution was injected into the tissues, and a severe cellulitis was produced.

Bone Formation in Thyroid

DR. M. G. SEELIG, St. Louis: A man, aged 52, gave a history of a definitely compromising asthenia, running hand in hand with a disabling vertigo, a pronounced Horner's syndrome (enophthalmos, myosis, hypotonia and ptosis) and

an enlarged thyroid lobe. In spite of the fact that the symptom complex strongly suggested either a malignant tumor of the thyroid or a cerebral lesion of grave nature, nothing could be made out on physical examination to corroborate such suspicions. Roentgen-ray examination showed no evidence of intrathoracic goiter, and the first examination of the plates failed to show any shadow cast by the thyroid. Under gas-oxygen-ether anesthesia, a typical hemithyroidectomy was done without difficulty of any kind. The anterior portion of the removed lobe was made up of typical adenomatous thyroid tissue, soft in consistency and with a nodular surface, whereas the whole posterior portion of the lobe was stony hard and bonelike. It was really a mass of bone, triangular in outline, and it had crowded the carotid artery somewhat externally, growing under the vessel and pressing with its sharp edge against the cervical sympathetic nerve. No visible break in the continuity of this nerve could be made out. The roentgenograms were reexamined, and it was found that a shadow had been overlooked.

Choice of Procedure When Confronted by Goiter and a Secondary Disease Requiring Surgical Treatment

DR. WILLARD BARTLETT, St. Louis: Thyroidectomy should be the first procedure on a patient who seems greatly embarrassed by a goiter of unusually large size. The thyroid should be removed before any other operation is done, provided it is producing the most marked symptoms. One should remove first a goiter which might by its presence interfere with an anesthetic needed for the performance of another operation. A toxic goiter had better be removed first, since this renders any patient a better risk for subsequent surgical procedure. On the other hand, there seem to be distinct advantages in doing the other needed operation first in many patients. The patient's resistance to surgery in general is tested in this manner before the thyroid is attacked. A preliminary rest in bed is the best possible preparation for thyroidectomy. Operation for malignant disease elsewhere in the body takes precedence over any other. Conditions elsewhere threatening life demand immediate operation to the exclusion of every other lesion. The eradication of a source of focal infection by a surgical operation is the best preparation for a thyroidectomy. The other operation should be done first when the lesion necessitating it produces the most urgent set of symptoms. It is often well to do the other operation first if the patient merely thinks it produces the most urgent symptoms. There is an economic reason for doing an abdominal operation before that on the thyroid, if both are needed, during the same hospital stay for convalescence after the former requires about twice as long as it does after the latter. One cannot generalize for all patients, and we must individualize to approach the ideal.

Anuria Following Transfusion; Decapsulation of Both Kidneys

DR. FREDERIC W. BANCROFT, New York: We have been led to believe that transfusion is a relatively safe procedure. Kidney complications are exceedingly rare. There are very few case reports of complete suppression. In my case, the anuria persisted for nine days with a total secretion during this time of only 35 ounces. As a last resort, a double decapsulation of the kidneys was performed. This was followed by immediate relief of symptoms, the urine output gradually increasing until 50 ounces was passed in twenty-four hours on the fifth day after operation.

Retroperitoneal Cysts

DR. HENRY W. CAVE, New York: My patient was a boy, aged 3 years, who was brought in because of a definite increase in the size and prominence of his abdomen. There was loss of appetite, but no pain was complained of in the beginning. Definite tenderness was elicited in the right upper and lower quadrants, and in the epigastrium. The preoperative diagnosis was tuberculous peritonitis. When the abdomen was opened, the cecum, appendix and transverse colon were found pushed high up under the liver and spread out over the dome of a great cyst wall, which had apparently pushed the posterior peritoneum forward. Coils of small intestine lay to the left of the bulging cystic tumor. Stomach, liver and gallbladder palpated normally. The right kidney could not be felt. The cyst extended downward to about the level of the false pelvis. It was impracticable, on account of the patient's condition, to remove the entire cyst, so it was decided to evacuate the cyst and establish drainage. Trocar puncture with suction was applied, and about 850 c.c. of dark red fluid was evacuated. The opening in the cyst was sutured to the peritoneum. Two fingers were inserted into the cyst cavity and two smaller cysts were opened into, one to the left and one to the right of the spinal column, high up in the mother cyst. From 150 to 175 c.c. was evacuated from each of these cysts. After removal of all the fluid, the right kidney could be palpated as normal; the left kidney was palpated with some difficulty, but was thought to be normal. The postoperative course was stormy, but the patient was sent home after a stay of fifty-three days in the hospital.

Use of Sea Sponge as a Surgical Dressing

DRS. JOHN STAIGE DAVIS and HERBERT F. TRAUT, Baltimore: The sea sponge is easy to obtain and can be sterilized without difficulty. It can be applied under considerable pressure, which is elastic, even and continuous, with little danger of a pressure slough. It minimizes congestion in flaps and grafts. By its use, dead spaces are eliminated. It stays moist long enough to absorb any blood or serum that may ooze from the wound. It does not irritate or macerate the skin even after being in place for weeks. The moist sea sponge under pressure fits into depressions and over uneven surfaces more accurately than any other dressing material. When it drys, it forms a perfect mold of the surface, and absolutely splints and immobilizes the area over which it is applied. It is particularly valuable as a dressing after plastic operations of various kinds and for skin grafts, especially of the whole thickness variety. We have used the sea sponge with satisfaction on wounds requiring even pressure and immobilization on all parts of the body, and find it a most valuable surgical dressing.

Fractional Ligation of Common Carotid Artery in Treatment of Pulsating Exophthalmos

DR. HARRY G. KERR, Washington, D. C.: Having determined by test that by partial compression of the common carotid against the transverse process of the sixth cervical vertebra, I could stop the pulsation of the eyeball and cause a disappearance of the bruit subjectively, without producing any signs of cerebral anemia, even when pressure was maintained for a considerable period of time, I operated on a patient under local anesthesia and passed a strip of fascia lata around the common carotid below the bifurcation. The artery was gradually constricted until the pulsation of the eyeball ceased, but not to an extent sufficient to produce cerebral anemia. The patient, being conscious, was able to cooperate in guiding us to a nice exactness of the extent of occlusion that could be made on the artery short of producing serious symptoms. When this had been accomplished, the fascial band was sutured in situ with chromic catgut. The lumen of the artery had been reduced about 50 per cent. Three weeks later, the vessel was again exposed and was ligated with a double ligature above the fascial band. The patient was discharged entirely relieved of his annoying symptoms. Five years later, the sight in the affected eye was as good as in the other; the movement of the eyeball was perfectly normal. Occasionally, following violent exercise, pulsation of the eyeball can be seen; the noise is never heard except when lying on the affected side in the quiet of the night, and following too much exercise. He has never had any weakness or paresthesia of the opposite side of the body. This case was the result of a fracture of the base of the skull. The second case was the result of having the left eye destroyed by bird shot. A bruit was noted shortly thereafter, and then a pulsating exophthalmos of the right eye gradually developed. The third case was that of a woman, aged 73, and was probably of spontaneous etiology. Both these cases were treated in the same manner as the first case, with excellent results. Both patients have been practically free from annoying symptoms, one for twenty-two and the other for seven months. In both cases the condition of the eye is perfect.

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

American Journal of Anatomy, Philadelphia

34: 269-425 (Nov.) 1924

*Properties of Gonads as Controllers of Somatic and Psychical Characteristics. VI. Testicular Reactions in Experimental Cryptorchidism. C. R. Moore, Chicago.—p. 269.

*Id. VII. Vasectomy in Rabbit. C. R. Moore and W. J. Quick, Chicago.—p. 317.

*Id. VIII. Heat Application and Testicular Degeneration; Function of the Serotum. C. R. Moore, Chicago.—p. 336.

Studies on Gonads of Fowl. IV. Intertubular Tissues of Testis in Normal and Hen-Feathered Cocks. J. F. Nonidez, Ithaca, N. Y.—p. 359.

Id. V. Effect of Ligation of Vas Deferens on Structure of Testis. J. F. Nonidez, Ithaca, N. Y.—p. 393.

Testicular Reactions in Experimental Cryptorchidism.—Moore adduces experimental evidence of the function of the scrotum as a local thermoregulator for the testes. It is believed that this conception will aid greatly in explaining many of the discrepancies in testicular behavior and that it will form a basis for further procedures in investigations into the biology of sex, particularly in mammals.

Vasectomy in Rabbit.—Moore and Quick found that occluding the vas deferens in the rabbit does not lead to degeneration of the germinal epithelium of the testis at any time up to six months after operation, whereas, peritoneal retention of an active adult rabbit testis causes degeneration in a very short time. Occlusion of the vas deferens did not result in the formation of cysts at the free end of the cut vas, but did cause the epididymis to increase to two or three times its normal size. This great increase in size of the epididymis may cause testicular displacement upward into the open inguinal canal or even into the peritoneal cavity, and degeneration may follow this displacement. Such degeneration, however, is due primarily to body temperature and not to the occlusion of the vas deferens. Hypertrophy of the interstitial cells does not follow vasectomy in the rabbit.

Scrotum is Thermoregulator for Testes.—Moore states that application of slightly higher than normal body temperatures to the external surface of the scrotum will cause degeneration of the generative portion of the testes; this application is followed by similar reactions whether given by means of the heat from an electric light, electric stove, or hot water. A single ten-minute application of water of 47 C. to the scrotal surface will be followed in the course of two weeks by marked degeneration of seminiferous tubules along one side of the testis; deeper than the more severe area of degeneration, tubules are less affected and show but mild signs of degeneration, whereas tubules on the opposite side from the point of application may be practically normal and contain spermatozoa. By graded application of heat (temperature or time varying) single scrotal application is followed by complete loss of germinal epithelium. Continuous application is more effective in producing degeneration than intermittent (daily) applications.

American Journal of Physiology, Baltimore

70: 453-772 (Nov.) 1924

Suprarenalectomy: Relation to Metabolism of Cat. O. W. Barlow, Columbia, Mo.—p. 453.

*Secretory Function of Renal Tubules. E. K. Marshall and M. M. Crane, Baltimore.—p. 465.

*Microscopic Observations of Living Kidney After Injection of Phenolsulphonephthalein. J. G. Edwards and E. K. Marshall, Jr., Baltimore.—p. 489.

Physiologic Reaction and Structure of Vocal Apparatus of California Singing Fish, Porichthys Notatus. C. W. Greene, Columbia, Mo.—p. 496.

Phosphorescence of Porichthys Notatus, California Singing Fish. C. W. Greene and H. H. Greene, Columbia, Mo.—p. 500.

Edema, Experimental, in Conjunctivitis; Effects of Vasodilator Drugs, Local Anesthetics and Vital Stains. A. D. Hirschfelder, Minneapolis.—p. 507.

*Effect of Insulin in Experimental Intoxication with Alcohol and Acetone. A. D. Hirschfelder and H. C. Maxwell, Minneapolis.—p. 520.

*Tetany and Diet. T. Inouye. New Haven, Conn.—p. 524.

Effect of Ovarian Extracts on Spontaneous Contractions of Fallopian Tube of Domestic Pig with Reference to Oestrous Cycle. D. L. Seckinger, Baltimore.—p. 538.

Factors in Causation of Differential Blood Pressure. H. C. Bazett, Philadelphia.—p. 550.

*Respiratory Wave in Arterial Blood Pressure. M. B. Visscher, A. Rupp and F. H. Scott, Minneapolis.—p. 586.

Permeability of Urinary Bladder to Urea and Sodium Chlorid. J. L. Vickers and E. K. Marshall, Jr., Baltimore.—p. 607.

Effects of Epinephrin on Reaction of Intestinal Segments to Oxygen. R. G. Hoskins and E. S. Hunter, Columbus, Ohio.—p. 613.

Studies on Bioluminescence. XVI. What Determines Color of Light of Luminous Animals? E. N. Harvey, Cleveland.—p. 619.

Compound Nature of Action Current of Nerve as Disclosed by Cathode Ray Oscillograph. J. Erlanger, H. S. Gasser and G. H. Bishop, St. Louis.—p. 634.

Secretory Function of Renal Tubules.—The fact that both urea and phenol red are more concentrated in the dorsal part of the frog's kidney than in the ventral, taken in connection with what is known of the structure of this kidney leads Marshall and Crane to the conclusion that these substances are secreted mainly, if not entirely, by the proximal convoluted tubules.

Microscopic Observations of Living Kidney.—Direct microscopic observations made by Edwards and Marshall of the kidneys of living frogs and rats after the intravascular injection of phenolsulphonephthalein show that this substance is present in high concentration in the cells of the proximal convoluted tubules. In the rat, only proximal convolutions can be observed; while in the frog, the dye is to be seen in lumina but not in the cells of the distal convolutions. These results are in accord with the idea that phenolsulphonephthalein is actively secreted by the proximal convoluted tubules of the kidneys.

Effect of Insulin on Oxidation of Alcohol and Acetone.—From the experiments made by Hirchfelder and Maxwell it would appear that insulin does not increase the oxidation of alcohol or acetone in the body or antagonize their toxic effects.

Lactose and Galactose in Diet Prevent Tetany.—From experiments reported on by Inouye it appears that the presence of certain amounts of lactose and galactose in the food served to prevent the onset of tetany in dogs indefinitely, whereas when the animals were fed with other carbohydrates, they developed severe tetany in a few days. The amount of lactose needed for this preventive effect was relatively smaller than has been generally believed necessary to secure an acidophilic change of the intestinal flora. It was shown also that when the protein (casein) in the foods was increased, more lactose was needed to permit a beneficial effect. The fact that parenteral administration of lactose and galactose failed to prevent tetany seems to suggest that the place where lactose acts may be sought in the alimentary tract.

Respiratory Wave in Arterial Blood Pressure.—It appears probable to Visscher, Rupp and Scott, from the evidence available, that the respiratory wave in arterial blood pressure is the resultant of a number of factors affecting the output of the heart. Most important is the lowered intrathoracic pressure facilitating the flow of blood to the atria of the heart. Secondary in importance is the effect of the condition of the lung vessels on the flow of blood from the right to the left side of the heart. The impression, current in textbooks of physiology, that the inner and outer layers of the lung wall are pulled apart by the negative pressure within the thorax in inspiration, is said to be entirely erroneous. The only force operating is that of atmospheric pressure acting against the elastic tension of the lung, therefore the two layers of the lung must be pushed out in the same direction. It follows, therefore, that the lung vessels will be stretched in length and decreased in bore, thereby increasing the resistance to the flow of blood in the distended condition. It is evident also that the inspiratory act produces a rise in blood pressure and the expiratory act a fall. In which phase of respiration the rise or fall appears is dependent on the heart respiration ratio.

American Journal of Roentgenology and Radium Therapy, New York

12: 403-508 (Nov.) 1924

Roentgenologic Diagnosis of Cholecystic Disease with Aid of Sodium Salt of Tetrabromphenolphthalein. R. D. Carman and V. S. Counseller, Rochester, Minn.—p. 403.
*Redundant Colon. J. L. Kantor, New York City.—p. 414.
Some Anomalies of Kidney. B. H. Nichols, Cleveland.—p. 431.
Nature and Differentiation of Pleural Annular Shadows. J. B. Amberson, Loomis, N. Y.—p. 438.
Syphilis of Stomach: Ten Cases. A. S. Merrill, Boston.—p. 444.
Factors in Biologic Action of Radiation. G. Failla, New York City.—p. 454.
Comparison Between French and German "Erythema Dose" as Measured on Solomon Isotoquantimeter. I. I. Kaplan, New York City.—p. 464.
*Effect of Roentgen Rays on Suprarenal. C. L. Martin, F. T. Rogers and N. F. Fisher, Dallas, Texas.—p. 466.
Treatment of Carcinoma of Esophagus by Radiation. D. C. Greene, Boston.—p. 471.
Effect on Tumors of Radiation of Different Wave Lengths. F. C. Wood, New York City.—p. 474.

Redundant Colon.—Kantor asserts that redundant colon is by no means a rare anomaly. It occurs in from 9 to 14 per cent. of all persons and in 23 per cent. of all constipated persons. It is more common in sthenics and asthenics, and in men than in women. Kantor discovered sixty-two cases among 668 persons examined. Constipation and gas distress are the most common symptoms. Pain is almost as common. Volvulus, though rare, considering the frequency of the condition, occurs only in redundant intestines. The diagnosis is made by roentgen-ray examination. The therapy consists in restoration of colon function where this is decompensated, and otherwise in noninterference. Vicious cathartic and enema habits should be discontinued. Spasticity should be overcome by rest, lubrication and antispasmodics. Surgery is not indicated for redundancy as such and should be reserved for superimposed accidents such as twists or torsions.

Effect of Irradiation on Suprarenal.—Direct, heavy irradiation of the isolated left suprarenal, administered following the removal of the right suprarenal of a dog, produced no symptoms during practically a month of observation, although a marked fibrosis occurred in the irradiated gland. The same dose produced cachexia and death when applied to an isolated loop of small intestine, and marked fibrosis when applied to the upper pole of the kidney.

American Journal of Tropical Medicine, Baltimore

4: 487-571 (Nov.) 1924

Relation Between Nightsoil Disposal in China and Propagation of Helminthic Diseases. E. C. Faust, Peking, China.—p. 487.
Treatment of Clonorchiosis. G. C. Shattuck, Boston.—p. 507.
Studies on Tricercomonas Intestinalis (Wenyon and O'Connor, 1917). W. C. Boeck, Boston.—p. 519.
Natural and Cultural Growth of Certain Intestinal Flagellates. K. M. Lynch, Dallas, Texas.—p. 537.
Sucking Lice of Jack Rabbits. H. E. Ewing.—p. 547.
*Filtrability of Leptospira Icteroides in Culture. F. H. Dieterich, New York.—p. 553.

Filtrability of Leptospira Icteroides.—The experiment made by Dieterich with cultures of *Leptospira icteroides* furnishes conclusive confirmatory evidence of the filtrability of the organism. Whether it passes through the filter in its spiral form, assisted by its active motility, or in a granular phase, further experimental evidence may determine.

American Review of Tuberculosis, Baltimore

10: 227-333 (Nov.) 1924

Healing of Pulmonary Tuberculosis. I. Absorption of Pulmonary Deposits. J. B. Amberson, Jr., Loomis, N. Y.—p. 227.
*Pathologic Evidence of First Infection in Association with Active Pulmonary Tuberculosis. E. L. Opie, Philadelphia.—p. 249.
Active and Latent Tuberculosis in Negro Race. E. L. Opie, Philadelphia.—p. 265.
*Racial Characteristics as Cause of High Tuberculosis Death Rate Among Negroes. C. R. Grandy, Norfolk, Va.—p. 275.
*Inheritance Factor in Tuberculosis. G. J. Drolet, New York.—p. 280.
*Results of Pirquet Tuberculin Tests on 1,654 Children in Rural Community in Minnesota. S. A. Slater, Worthington, Minn.—p. 299.
Annular Shadows and Cavities at Cincinnati Tuberculosis Sanatorium. K. Dunham and V. Norton, Cincinnati.—p. 306.
Intrapulmonary Cavitation in Tuberculosis; Study of 125 Patients. B. J. Weigel, Albuquerque, N. M.—p. 319.
Cholesterol Esters of Blood in Tuberculosis. H. C. Sweany, Chicago.—p. 329.

Focal Tuberculous Lesions.—Opie asserts that focal tuberculous lesions which have undergone calcification and are recognizable in roentgenograms of the excised lung are present in the lungs of 98 per cent. of white adults who die from diseases other than tuberculosis. In one fourth of these instances the lesions are of very small size (covering an area less than 25 sq. mm. on the plate). In one of every ten adults the healed lesions are as extensive as those which in children not infrequently cause fatal disseminated tuberculosis. Latent apical tuberculosis has been found in the lungs of one in every five of the white adults examined. These apical lesions are invariably accompanied by evidence of a preexisting focal infection which has had its origin in childhood. Active pulmonary tuberculosis (phthisis) is always accompanied by evidence of a preceding tuberculous infection. When acute miliary tuberculosis has occurred in adults it has not been accompanied by calcified lesions within the lungs, and the pulmonary lesion in these instances unlike the phthisis of adults has had the characters of a first infection. These observations indicate that general dissemination occurs because the adult has not been made resistant by infection acquired during childhood.

Racial Characteristics of Negro Cause High Tuberculosis Death Rate.—The large tuberculosis death rate in the negro, Grandy feels, is due to a racial lack of resistance, the result of his relatively short period of contact with the disease, rather than to bodily weakness or manner of living, though great improvement can be attained in this last respect. Relatively, the same preventive and curative work is being done for the two races in Virginia, and the total tuberculosis death rate has been cut in half in the last fifteen years, but the improvement is greater in the white race, whose rate is now about one-fourth that of the colored.

Inheritance Factor in Tuberculosis.—The almost universal decline of tuberculosis in countries or communities where it was formerly epidemic, and the decreased incidence of this disease in racial stocks that have been exposed longer to urbanization and to tuberculization, Drolet states, have in a measure been due to an increasing immunity acquired by evolution. Children of tuberculous parents do not inherit even a predisposition to the disease, but an increasing degree of immunity to it, instead.

Results of Pirquet Test.—Having given the Pirquet test to more than 1,600 children Slater is convinced that it is reliable. This is certainly true when the child has been exposed to massive infection or to a slight contact over a prolonged period. He is, however, of the opinion that a child living as most children do in the community studied can take care of a small amount of infection and, after a short period, not react. This would account for the fact that the older children do not show a higher percentage of positives.

Archives of Neurology and Psychiatry, Chicago

12: 487-600 (Nov.) 1924

*Surgical Treatment of Glossopharyngeal Neuralgia. A. W. Adson, Rochester, Minn.—p. 497.
Cardiovascular Physiology of Mental Defective. G. S. Stevenson, Minneapolis.—p. 507.
*Basal Metabolism Tests in One Hundred Mental Cases. C. B. Farr, Philadelphia.—p. 518.
*Insulin and Mental Depression. D. M. Cowie, J. P. Parsons and T. Raphael, Ann Arbor, Mich.—p. 522.
*Prognostic Value of Arterial Hypertension in Psychoses of Later Life. D. Gregg, Wellesley, Mass.—p. 534.
*Protein and Cellular Content of Cerebrospinal Fluid. A. W. Young and B. J. Alpers, Boston.—p. 537.
Recent Development of Metapsychology. F. I. Wertheimer, Baltimore.—p. 547.
Meningo-Encephalitis Associated with Carditis. M. Osnato and L. Casamajor, New York.—p. 553.

Surgical Treatment of Glossopharyngeal Neuralgia.—Glossopharyngeal neuralgia, says Adson, is a disease similar to trifacial neuralgia in that the pains associated with it are spasmodic, excruciating and lancinating, but radiate from the pharynx and tonsillar fossa to the ear. The pain is brought on by swallowing or yawning, and lasts for only a few moments; the intermittent periods of pain and ease may continue for from a few weeks to several months, but always recur. Glossopharyngeal neuralgia simulates trifacial neuralgia, temporary relief being obtained by peripheral avulsion.

In all probability, the disease involves the superior jugular ganglion of the glossopharyngeal nerve, and while it may be possible occasionally to avulse both the petrosal and the jugular ganglion from an extracranial approach, the only assurance of permanent relief lies in division of the glossopharyngeal nerve proximal to the superior ganglion, through an intracranial approach. The literature is reviewed and cases are cited.

Basal Metabolism of Mental Cases.—Among the 100 cases examined by Farr findings below the lower normal limit in women were 22 plus per cent.; in men, 31 per cent.; findings above the normal limit in women and men, were 12 per cent. Of twenty-seven patients, with miscellaneous psychoses, 22 per cent. were 10 per cent. below normal and 15 per cent. as much above normal. Of thirty-eight patients with mood disorders, 24 per cent. were below normal and 8 per cent. above. Of thirty-five patients with dementia praecox 37 per cent. were below normal and 17 per cent. above. Of five patients who presented a metabolism of minus 20 or lower, two depressed patients (one man and one woman) were profoundly undernourished, three dementia praecox patients (all men) were spare rather than emaciated. Of nine cases (three in each category) with a basal metabolism of 15 plus or more, one manic patient manifested other evidences of hyperthyroidism; one dementia praecox patient had an enlarged thyroid and a second had a slight tremor.

Insulin and Mental Depression.—Cowie and his associates assert that the characteristic glucose utilization curve of the depressed phase in manic-depressive psychoses is made to conform to that of a normal person or is completely flattened out, or is made to approximate that of the agitational phase by the subcutaneous injection of insulin. The amount of insulin necessary to accomplish this varies with the clinical status of the patient. There seems to be evidence that the degree of depression may be measured by the amount of insulin necessary to bring the glucose utilization curve to that of a normal person. The amount of insulin necessary to bring the curve to normal is a measure of the factors opposing the utilization of glucose.

Prognostic Value of Hypertension in Psychoses.—Evidence presented by Gregg seems to show that the prognosis of the psychoses of the later years is poor if hypertension is present to complicate the situation, but good if hypertension is not found.

Protein and Cellular Content of Cerebrospinal Fluid.—A study of the cellular and protein contents of the cerebrospinal fluid is presented by Young and Alpers in twenty-five cases in which intraspinal therapy was used with Swift-Ellis serum, in twenty-one cases in which the intracistern route was used, and in five cases in which intraventricular treatment was given. After the intraspinal injection of Swift-Ellis serum in the lumbar region, there occurs a marked rise in the cells and the total protein of the lumbar fluid after twenty-four hours, which is still present after forty-eight hours, and has disappeared at the end of six or seven days. A similar rise in the cells and the total protein of the lumbar spinal fluid is observed after the injection of Swift-Ellis serum by the cisternal and ventricular routes. A moderate rise in the cells and the total protein of the cisternal fluid is observed twenty-four hours after the injection of Swift-Ellis serum by the lumbar route. This increase disappears at the end of forty-eight hours. There is no increase in the cells and the total protein of the ventricular fluid twenty-four hours after the injection of Swift-Ellis serum into the lumbar region. The increase in cells—which are chiefly polymorphonuclear leukocytes—is due to the irritative action of the serum on the meninges.

Boston Medical and Surgical Journal

191: 1057-1100 (Dec. 4) 1924

Medicine and Community. H. Zinsser, New York.—p. 1057.
Signs and Symptoms in Early Tuberculosis. M. J. Stone and M. H. Jones, Rutland, Mass.—p. 1067.
*Proposed New Classification of Juvenile Tuberculosis. H. D. Chadwick, Westfield, Mass.—p. 1069.
Progress in Pulmonary Tuberculosis. J. B. Hawes, 2d.—p. 1070.
Primary Carcinoma of Gallbladder and Bile Ducts. R. H. Miller, Boston.—p. 1074.

Classification of Juvenile Tuberculosis.—Chadwick urges the adoption of the term hilum tuberculosis which describes the disease in the children whose tuberculosis is as yet confined to the lymphoid tissue about the trachea, the right and left bronchus and the larger subdivisions of the bronchi. It is in this tissue that tubercle bacilli lodge and very frequently produce disease in children from 3 to 12 years of age. Later, if the disease is not arrested in these glands, the parenchymatous tissue becomes involved and then the adult type of pulmonary tuberculosis develops. This can then be classified under the accepted nomenclature of minimal, moderately advanced, or advanced—according to the stage of the disease. Hilum tuberculosis is a comparatively benign condition when contrasted with pulmonary disease even when it is in an early stage of development. The prognosis of hilum tuberculosis is good when treatment is given. From an economic point of view a child with hilum tuberculosis when restored to health and a state of normal nutrition by being taught good habits and good hygiene is a good insurance risk.

Canadian Medical Association Journal, Montreal

14: 1041-1148 (Nov.) 1924

Arteriosclerosis. A. G. Nicholls, Halifax, N. S.—p. 1041.
Prompt Diagnosis of Pulmonary Tuberculosis. C. D. Parfitt, Gravenhurst.—p. 1046.
Treatment of Obesity. E. H. Mason, Montreal.—p. 1052.
*Value of Study of Blood Chemistry in Acute Abdomen. I. M. Rabinowitch, Montreal.—p. 1057.
*Use of Calcium Chlorid in Arterial Hypertension. W. L. T. Addison, Toronto.—p. 1059.
Clinical Significance of Vertigo. D. E. S. Wishart, Toronto.—p. 1062.
Nasal Accessory Sinus Disease. J. K. M. Dickie, Ottawa.—p. 1067.
Thyroid Preparations in Treatment of Stokes-Adams' Syndrome. F. A. Willius, Rochester, Minn.—p. 1072.
Roentgen-Ray Technic in Examination of Chest. G. E. Richards, Toronto.—p. 1077.
Bacteriology of Scarlet Fever. G. H. Eagles, Toronto.—p. 1080.
Clinical Aspects of Scarlet Fever. B. Hannah, Toronto.—p. 1083.
Heart Complications in Scarlet Fever. R. A. Jamieson, Toronto.—p. 1087.
Ear, Nose and Throat Complication of Scarlet Fever. J. G. Strachan, Toronto.—p. 1089.
Secondary Pneumonia; Therapeutics. G. A. Campbell, Ottawa.—p. 1092.
Parturient Perineum; Management. G. C. Melhado, Montreal.—p. 1095.
Fungi in Diseases of Skin. H. A. Dixon, Toronto.—p. 1097.
Treatment of Chronic Ulcers of Leg. R. E. Gaby, Toronto.—p. 1099.
Small Ulcers of Tongue. A. P. Bertwistle.—p. 1101.

Value of Studies of Blood Chemistry in Disease.—More than 80 per cent. of all cases of intestinal obstruction, peritonitis and pancreatitis examined by Rabinowitch showed increased blood urea nitrogen. The urea nitrogen ranged from 28 to 147 mg. per hundred cubic centimeters of blood, and the observed figures bore no constant relationship to the severity of the clinical signs and symptoms at the times the tests were made. An increase in the blood urea nitrogen was observed in some cases from twenty-four to forty-eight hours before definite clinical evidence of obstruction or peritonitis was noted, and such increase was sometimes found stationary in spite of improvement in the clinical picture. In the majority of cases, in which the increase was maintained, subsequent clinical symptoms developed and the cases terminated fatally. In addition to these cases sixteen cases of chronic appendicitis were observed. The blood urea nitrogen in all of these cases was normal. Six cases of constipation were studied, and all, except one in which constipation was induced intentionally during the treatment of an extensive burn over the buttock, showed no increase in the blood urea. The estimation of the sugar content of the blood has been found of some value in the diagnosis of obscure lesions of the upper abdominal region; 126 cases were observed. The finding of a mild degree hyperglycemia has aided in the diagnosis of obscure cases of pancreatitis. Hyperglycemia was found in over 75 per cent. of all the cases of pancreatitis and lesions of all the gallbladder and passages. These findings also give strong support to the clinical view that in most gallbladder cases—in this series 70 per cent.—there is associated pancreatitis, though of a very mild type. Thus though the finding of normal blood sugars in cases of upper abdominal lesions may have little or no significance, a finding of a hyperglycemia has a definite diagnostic value.

Calcium Chlorid in Arterial Hypertension.—Addison reports fourteen cases in which the administration of 180 grains of

calcium chlorid daily caused a marked lowering of the blood pressure.

Illinois Medical Journal, Oak Park

46: 229-304 (Oct.) 1924

Diagnosis and Treatment of Chronic or Latent Tonsillitis. J. Daland, Philadelphia.—p. 248.
*Influence of Mechanical Pressure on Wound Healing. V. P. Blair, St. Louis.—p. 249.
Mental Hygiene: Opportunity for Family Physician. S. M. Hobson, Chicago.—p. 252.
Monocular Myopia. J. E. Lebensohn, Chicago.—p. 254.
Foothold by Which Bogus Practitioner Dislodges the Skilled Man. The "Why" of Lay Education. C. J. Whalen, Chicago.—p. 259.
Intracranial Complications of Suppurative Otitis Media. C. F. Yerger, Chicago.—p. 260.
*Brain Injuries and Especially Intracranial Hemorrhage and Cerebral Edema in New-Born. W. Sharpe, New York City.—p. 264.
Mental Conditions Associated with Disease of Brain and Cranial Nerves of Special Sense. A. B. Yudelson, Chicago.—p. 268.
China and Chinese Therapy. W. E. Shastid, Pittsfield.—p. 273.
Upper Respiratory Infection in Children. G. L. Kaufmann, Chicago.—p. 276.
*Irritable Bowel (Colitis) Associated with Acute Respiratory Tract Infections. H. MacDonald, Evanston.—p. 278.
Streptococcus Infection of Upper Respiratory Tract. M. L. Fox, Chicago.—p. 280.
Common Orthopedic Conditions. R. O. Ritter, Chicago.—p. 282.
Phenolsulphonephthalein Test. J. K. Narat, Chicago.—p. 286.
Phosphatic Index. J. H. Dowd, Buffalo.—p. 286.

Influence of Mechanical Pressure on Wound Healing.—In the preparation and transplantation of pedicle flaps one of the most disastrous incidents is the failure of union of the flap to its original or its new bed and one of the most efficient preventives, even in the presence of a moderate amount of contamination, is evenly applied pressure. The safest and most efficient plan of applying this, according to Blair, is the incorporation in the dressing of one or several large, soft marine sponges that have been wet, rung out in a twisted towel, and immediately bandaged in place. It is particularly useful where the graft is bedded on a surface of irregular topography and consistency. To a less certain extent this sponge pressure can help to control venous stasis which threatens the vitality of the flap.

Brain Injuries in New-Born.—Bloody and blood-tinged cerebrospinal fluid was found by Sharpe in 9 per cent. in the first series of 100 consecutive new-born babies and in 13 per cent. in the second series. Lumbar puncture as a diagnostic and therapeutic measure has proved to be a safe procedure in these cases in the absence of shock, and it is advocated in suspected and doubtful cases having the mildest signs of intracranial hemorrhage and cerebral edema. Repeated lumbar punctures of spinal drainage are advocated every six to twenty-four hours in cases having bloody cerebrospinal fluid under varying degrees of increased pressure; if spinal drainage fails to diminish the blood concentration and to lower the increased pressure of the cerebrospinal fluid, then a modified subtemporal decompression for cranial drainage is indicated. Death results from extensive intracranial hemorrhage and cerebral edema in the new-born.

Colon Disease Due to Respiratory Infection.—Six cases are cited by MacDonald to show that soreness along the colon is not infrequently a complication of acute respiratory tract infection. It is suggested that focal infections may be a causative factor in some cases of chronic irritable bowel.

Journal of Biological Chemistry, Baltimore

62: 1-286 (Nov.) 1924

Method for Fractional Analysis of Incomplete Protein Hydrolysates. H. Wasteneys and H. Borsook, Toronto.—p. 1.
Organic Phosphorus of Urine. G. E. Youngburg and G. W. Pucher, Buffalo.—p. 31.
*Intestinal Chemistry. I. Estimation of Intestinal Reductions. O. Bergeim, Chicago.—p. 45.
Influence of Sodium Chlorid on Level of Blood Uric Acid. V. J. Harding, K. D. Allin and H. B. Van Wyck, Toronto.—p. 61.
Amino-Acid Synthesis in Animal Organism. Availability of Some Caproic Acid Derivatives for Synthesis of Lysine. D. A. McGinty, H. B. Lewis and C. S. Marvel, Urbana, Ill.—p. 75.
Effects of Anoxemia on Nitrogen Metabolism. E. H. Brunquist, E. J. Schneller and A. S. Loevenhart, Madison, Wis.—p. 93.
*V. Effect of Light on Calcium and Phosphorus Equilibrium in Mature Lactating Animals. E. B. Hart, H. Steenbock and C. A. Elvehjem, Madison, Wis.—p. 117.
Determination of Lipoid Phosphorus in Blood and Plasma. J. C. Whitehorn, Waverley, Mass.—p. 133.
Influence of Glucose and Fructose on Rate of Hydrolysis of Sucrose by Invertase from Honey. J. M. Nelson and C. T. Sottery, New York.—p. 139.
Passage of Boric Acid Through Skin by Osmosis. L. Kahlenberg, Madison, Wis.—p. 149.
Critical Study of Jendrassik Reaction for Water Soluble B. V. E. Levine, Omaha.—p. 157.
Optical Properties of Some Amino-Acids. G. L. Keenan, Washington, D. C.—p. 163.
Protein from Leaves of Alfalfa. A. C. Chibnall and L. S. Nolan, New Haven, Conn.—p. 173.
Protein from Leaves of Zea Mays. A. C. Chibnall and L. S. Nolan, New Haven, Conn.—p. 179.
Tryptophane and Cystine Content of Various Proteins. D. B. Jones, C. E. F. Geradorff and O. Moeller, Washington, D. C.—p. 183.
Researches on Proteins. VIII. The Destructive Distillation of Fibroin of Silk. T. B. Johnson and P. G. Daschavsky, New Haven, Conn.—p. 197.
Fat Soluble Vitamins. XIX. Induction of Calcifying Properties in Rickets-Producing Ration by Radiant Energy. H. Steenbock and M. T. Nelson, Madison, Wis.—p. 209.
VII. Fate of p-Chloro, p-Bromo, and p-Amino Acids in Dog, Rabbit and Man. L. R. Cerecedo and C. P. Sherwin, New York.—p. 217.
Autolysis. XIII. Kinetics of Autolytic Mechanism. A. B. Hertzman and H. C. Bradley, Madison, Wis.—p. 231.
Action of Thyroxin. I. M. Rabinowitch, Montreal.—p. 245.
*Relation of Natural Foodstuffs and Their Treatment on Growth and Reproduction. H. G. Miller and W. W. Yates, Corvallis, Ore.—p. 259.
Carbon Dioxid Equilibrium in Alveolar Air and Arterial Blood. A. V. Bock and H. Field, Boston.—p. 269.
Fat Soluble Vitamins. XX. Modified Technic for Determination of Vitamin A. H. Steenbock, M. T. Nelson and A. Black, Madison, Wis.—p. 275.

Estimation of Intestinal Reduction Processes.—The fact that ferric oxid when ingested with foods is reduced in the intestine to the ferrous form and that both forms are readily estimated in the feces, Bergeim makes the basis of a simple method for obtaining a quantitative index of reduction processes in the intestine. This method furnishes a simple index of intestinal putrefaction.

Effect of Ultraviolet Light on Calcium and Phosphorus Equilibrium.—Hart, Steenbock and Elvehjem present data showing that ultraviolet light can influence the storage of calcium and phosphorus and the equilibrium of these elements in the blood stream of mature animals in a way similar to its effects on growing animals. Two mature, lactating goats and a mature, dry goat were brought into distinctly negative calcium balances, or calcium equilibrium, on a ration deficient in the antirachitic factor; on exposure for twenty minutes daily to the emanations from a quartz mercury vapor lamp, negative calcium balances were changed to distinctly positive balances. The inorganic phosphorus of the blood was also appreciably increased through radiation. On similar calcium and phosphorus levels of intake and in the presence of low amounts of the antirachitic factor, mammary secretion brings on rapidly a negative calcium balance as compared to a nonlactating animal.

Treated Foodstuffs Influence Growth and Development.—Miller and Yates found that corn extracted with cold water and then dried (at not over 100 C.) did not contain the dietary factors necessary for reproduction. Unextracted corn, wheat embryo, alcoholic extract of wheat embryo, and green kale contain this dietary factor.

Journal of Industrial Hygiene, Boston

6: 267-306 (Nov.) 1924

*Counter Shock as Method of Resuscitation Following Electrocution. A. Campbell and L. Hill.—p. 267.
*Fatigue in Washing Departments of New York Steam Laundries. M. R. Mayers.—p. 270.
Investigation of Atmospheric Conditions in Coal Mines by Means of Kata Thermometer. H. M. Vernon and T. Bedford.—p. 281.
Medical Care of South African Natives in Gold Mines of Witwatersrand. L. E. Hertslet.—p. 291.

Counter Shock in Resuscitation.—Experimental results have convinced Campbell and Hill that counter shock is of no value in resuscitation, and that there is no evidence that the standard methods, founded on physiologic research, should be altered.

Effect of Fatigue on Laundry Workers.—This research by Mayers disclosed among laundry workers (*a*) abnormally high systolic blood pressure; (*b*) abnormally low diastolic pressure; (*c*) high pulse pressure; (*d*) high pulse rate; (*e*) slight cardiac hypertrophy (?); (*f*) accentuated aortic

second sound. Laboratory tests revealed: (*a*) urines of somewhat high specific gravity; (*b*) absence of any nitrogen retention and (*c*) no increase in the blood sugar, despite the fact that the men are engaged in heavy, muscular work.

Surgery, Gynecology and Obstetrics, Chicago

SD: 543-700 (Nov.) 1924

*Study of Surgical Repair of Peripheral Nerves. H. Delagenière, Le Mans, France.—p. 543.
*Treatment of Brain Abscess by Unroofing and Temporary Herniation of Abscess Cavity with Avoidance of Usual Drainage Methods. J. E. J. King, New York.—p. 554.
Pseudomyxoma Peritonei. E. Ries, Chicago.—p. 569.
*Inflammatory Carcinoma of Breast. B. J. Lee and N. E. Tennebaum, New York.—p. 580.
*New Method of Restoring Lumen in Case of Impermeable Stricture of Esophagus. E. King, Cincinnati.—p. 596.
Osteomalacia: Case Necessitating Delivery by Cesarean Section. E. L. Stone, New Haven, Conn.—p. 599.
*Early Recognition of Acute Perforation of Gastric and Duodenal Ulcer by Roentgen-Ray Examination of Spontaneous Pneumoperitoneum. R. T. Vaughan and W. A. Brams, Chicago.—p. 610.
*Gastro-Enterostomy for Relief of Chronic Pyloric Stenosis with Spasm Due to Aneurysm of Abdominal Aorta. M. F. Bledsoe, Port Arthur, Texas.—p. 618.
*Unrecognised Hemorrhage Within Upper Leg, Resulting Fatally. C. L. Larkin, Waterbury, Conn.—p. 621.
Focal Infection (Elephantiasis). R. L. Rhodes, Augusta, Ga.—p. 624.
Adenomyoma of Rectovaginal Septum; Associated with Pregnancy; Radium Treatment; Apparent Recurrence. L. Hevly, New York.—p. 626.
Epidermal Canals Infected with Gonococci. E. Rupel, Indianapolis.—p. 636.
*Excision of Cervix for Endocervicitis. S. Rottenberg and G. Schwartz, New York.—p. 639.
Fractures of Shaft of Femur. W. C. Campbell and J. S. Speed, Memphis, Tenn.—p. 642.
Operative Treatment of Cerebellar Abscess of Otitic Origin. W. P. Eagleton, Newark, N. J.—p. 653.
New Suprapubic Prostatic Elevator. R. E. Farr, Minneapolis.—p. 660.
Illuminating Device for Vaginal Speculum. M. N. Hyams, New York.—p. 661.

Surgical Repair of Peripheral Nerves.—Three hundred and seventy-five of these cases were analyzed by Delagenière. The operations performed were: simple neurolysis, 113; resections and sutures, 236; nerve grafts, 9; resection and immediate suture for causalgia, 17. The 113 neurolyses did not give good results except in those cases in which there was a simple compression without a demonstrable lesion of the nerve. In these cases recovery was rapid and complete. In the other cases, which were by far the greater number, operation did not give as favorable results as did nonintervention which was advised by Tinel. It was nearly always found that the nerve was compressed or strangled, presenting an interstitial lesion (neuroma or cheloid) which prevented the reconstruction or the reestablishment of its functions. The 236 nerve resections followed by suture can be divided into 142 sutures performed correctly, and sutures performed incorrectly. The 142 correct sutures have resulted in 122 complete successes, 16 partial successes, and 4 failures. On the other hand, the 94 incorrect sutures have given only 6 complete successes, 37 partial successes and 51 failures. To obtain good results in nerve sutures, it is important to remember that: the earlier the suture is performed the more rapid is the regeneration. In the case of delayed suture, the regeneration is simply delayed, and eventually it should be just as complete. The regeneration appeared to be much quicker when there was complete physiologic interruption but no separation of the ends of the nerve. The radial, musculocutaneous, and external popliteal nerves regenerate most quickly. The internal popliteal, the ulnar, and the medium regenerate with greater difficulty. This is due to the fact that there is a greater number of sensory fibers which go to make up the nerve and to the danger of aberration of the nerve fibers in the new formation. The motor fibers grow down into the open sheaths of the sensory fibers, and vice versa. This produces a type of useless regeneration.

Treatment of Brain Abscess.—King advises (*a*) creation of a rather large cranial defect directly over abscess cavity; (*b*) complete "unroofing" of the cavity; (*c*) complete herniation or eversion of the cavity; (*d*) dakinization of area throughout treatment; (*e*) prevention of trauma and early compression of hernia cerebri; (*f*) recession of hernia; (*g*) adhesive plaster strapping and (*h*) epithelization. Three patients who were consecutively operated on and treated in this manner have recovered.

Inflammatory Carcinoma of Breast.—Analysis made by Lee and Tennebaum of twenty-eight cases seems to show that inflammatory carcinoma appears to be a distinct clinical phase of carcinoma of the breast. Generally, this type has been unrecognized, being frequently mistaken for other diseases of the breast. The inflammatory appearances are characteristic. This variety of mammary cancer shows no constant pathologic type. The most striking pathologic change is a wide invasion of dermal lymphatics by carcinoma. Bacteriologic and biochemical studies have failed to explain the inflammatory manifestations. The cases do badly if treated surgically. At present irradiation offers the only hope of palliation, diminishing the patient's suffering, and giving definite prolongation of life.

Operation for Stricture of Esophagus.—In this case King passed a Jackson medium esophagoscope from above and a small Mosher esophagoscope from below. The two esophagoscopes were brought into alinement under the fluoroscope. Long biting forceps were then pushed downward through the upper endoscope on to the stricture. By means of biting and pushing, under close observation through the fluoroscope, the forceps passed through the stricture into the mouth of the retrograde esophagoscope. The instruments were removed immediately and the patient was put to bed under close observation. No untoward symptoms having developed, and upper esophagoscopy was done the next day and a small filiform bougie, on which a string had been securely fastened, was passed into the stomach. The string was recovered from the stomach immediately and the bougie removed. Further dilatation was accomplished by means of small metal bougies run in series on the string from below.

Spontaneous Pneumoperitoneum in Perforated Gastric and Duodenal Ulcer.—Free gas in the peritoneal cavity was found by Vaughan and Brams on roentgen-ray examination in thirteen of fifteen cases of anatomically proved acute perforation of gastric or duodenal ulcer and is rarely seen in any other condition which can be confused with perforated peptic ulcer. The free gas has been seen as early as two hours after the acute perforation occurs, and but a small quantity of air is necessary for its demonstration. The presence of free air in the peritoneal cavity is demonstrated by observing a clear, distinctly bright zone which shifts on change of posture of the patient. The sign is of great value because it makes possible an early and definite diagnosis without danger or discomfort to the patient. Earlier operation is possible as a result of the earlier diagnosis which this added method of examination makes possible.

Gastro-Enterostomy for Chronic Pyloric Stenosis.—Bledsoe reports a case of chronic pyloric stenosis, with violent pylorospasm together with cardiospasm and hiccup due to an intramural spiral or cylindrical type of aneurism of the abdominal aorta, extending from, possibly, within the diaphragm to the upper border of the pancreas with constant and excruciating pain and starvation. Relief was obtained by posterior short-loop gastrojejunostomy.

Unrecognized Hemorrhage Within Leg.—Larkin reports two cases of injury to the leg which show the possibility of losing enough blood within the upper leg to cause death. Death comes either instantaneously, following the rapid extravasation of blood, or as in the cases of slow oozing, a fatal ending may be prolonged for hours or even days. The cases indicate that the oozing may go far beyond the formation of a hematoma, and the blood may find its way unchecked along muscle and fascial planes and death ensue. The second case recorded shows that the bleeding may not occur as an ooze but as a swift outpouring of blood into the leg, followed quickly by death.

Excision of Cervix for Endocervicitis.—Rottenberg and Schwartz describe their modification of the Sturmdorf operation. After excising the cervical cone, a cuff of vaginal mucosa is brought into contact with the cervical mucosa, thus completely covering all the denuded areas, and furthermore, substituting healthy vaginal mucosa as a lining for the infected cervical mucosa which has been removed.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Surgery, Bristol

12:209-412 (Oct.) 1924

Sectional Plaster-of-Paris Casing. W. A. Cochrane.—p. 213.
*Squamous Cell Carcinoma of Renal Calyx. G. Keynes.—p. 224.
*Prognosis in Acute Appendicitis. R. J. McNeill Love.—p. 232.
*Aseptic Resection of Intestine. S. Pringle.—p. 238.
Polycystic Disease of Kidneys: Five Cases. R. F. Young.—p. 244.
*White Myeloma of Radius. T. H. Burlend and D. J. Harries.—p. 254.
*Plexiform Neurofibroma of Solar Plexus. H. A. Bruce.—p. 268.
Duodenectomy. C. A. Pannett.—p. 273.
Paget's Disease of Nipple. G. L. Cheatle.—p. 284.
*Transplantation of Fibrous Tissues in Repair of Anatomic Defects. W. E. Gallie and A. B. LeMesurier.—p. 289.
Submaxillary Salivary Calculus. H. Bailey.—p. 321.
*Structural Variations in Thyroid Metastases in Bone. F. G. Bell.—p. 331.
*New Technic for Arthrodesis of Tarsal Joints. A. MacLennan.—p. 342.
Retroperitoneal Catheterization of Ureters. A. Fullerton.—p. 351.
*Fibroma of Abdominal Wall. M. J. Stewart and T. B. Mouat.—p. 355.
Chronic Intussusception: Fourteen Cases. J. G. Jones.—p. 378.

Squamous Cell Carcinoma of Kidney.—Two cases of renal carcinoma are reported by Keynes. The first was associated with calculus and pyonephrosis; the second with a hydronephrosis of the congenital type.

Prognosis in Acute Appendicitis.—On the basis of an analysis of 2,018 cases, Love discusses the prognosis of acute appendicitis with regard to local conditions present at operation, the duration of the attack, and the age of the patient. The data presented show that when cutaneous hyperesthesia has disappeared in a case of acute appendicitis, delayed treatment will usually allow the infection to subside. A tentative period of delay does not adversely influence the prognosis, and, combining all cases treated on delayed lines, the mortality, as compared with cases subjected to immediate operation, is nearly halved. Delayed treatment is less uniformly successful at the two extremes of life: in children partly because purgatives are freely administered, and in both cases because resistance to infection is low. The mortality of cases subjected to operation is notoriously high from the third to the fifth days, and especially at this period should delayed treatment be given a trial, so that the patient's resistance may be reestablished. Incidental complications in cases operated on immediately are approximately three times as common as in delayed cases. The delayed treatment can only be applied satisfactorily under hospital conditions, when a rigid routine can be strictly enforced. Constant observations must be made regarding alteration of local signs and changes in the general conditions of the patient.

Aseptic Resection of Intestine.—Pringle divides the intestine through a previously crushed portion, so that the mucous membrane is never exposed and the risk of infection is thus reduced to a minimum, and he uses a clamp to close the ends of the segments instead of encircling ligatures. This step he believes lessens the possibility of permanent internal shelf formation, as the infolding mattress sutures can be placed much closer up to the clamp than to the encircling ligature. Another advantage of his method is that no special instrument is needed.

Myeloma of Radius: Beef Bone Transplant.—After resecting the lower end of the radius, except the epiphysis, for myeloma, Burlend and Harries implanted a piece of dead beef bone. The graft was completely absorbed and the radius restored.

Plexiform Neurofibroma of Solar Plexus.—Constant pain in the back in the right lumbar region, accompanied by tenderness on deep pressure, usually relieved by a belladonna plaster, were the subjective symptoms in Bruce's case. The roentgen ray disclosed a mass external and posterior to the stomach, pressing on the lesser curvature and also on the transverse colon. A diagnosis of "tumor of the pancreas" (probably a cyst) was made. Under anesthesia, the tumor, which was very hard and nodular, could be moved freely from side to side, and to a less extent from above downward. At operation the tumor mass was found to be about the size of a grape-fruit, distinctly nodular, and appeared to be connected with the pancreas. A thorough examination revealed it lying behind the pancreas. The patient recovered from the immediate effects of the operation, but died suddenly the next morning. The majority of the tumor was made up of nonmedullated nerve fibers intimately surrounded by fibrous tissue.

Fibrous Tissue Transplants.—Experimental observation and clinical experience have convinced Gallie and LeMesurier of the practicability of using tissue transplants in various surgical conditions, such as injured tendons and ligaments, fractured patella and especially, in the repair of hernia. They are convinced that the employment of these tissues as transplants in the form of sutures removes the element of chance which attends healing by scar tissue.

Thyroid Metastases in Bone.—Bell has had opportunity to study carefully three cases of malignant disease of the thyroid with bone metastases. He found that metastatic tumors of bone of thyroid origin exhibit considerable histologic variations. An embryonic or fetal structure appears to form the basal type, and this may develop toward a normal thyroid structure with formation of colloid, or may assume frankly malignant characters. All these variations may be presented in the same tumor. The fact that secondary tumors may exhibit a striking tendency to the formation of a structure practically indistinguishable from that of the normal or benign thyroid—"the return toward the normal"—probably provides an explanation for some of the so-called benign metastatic tumors. Bell thinks that this feature should be coupled with the fact that the proliferative changes in the thyroid indicative of malignancy may be so minute or even microscopical as to be readily missed in the absence of a thorough histologic examination, and still more readily if reliance is placed on a clinical examination. The sinusoidal character of the thyroid circulation, seen to great advantage in adenomata, may have a direct bearing on the origin of benign metastatic tumors. The true criterion as to the benign or malignant nature of thyroid osseous deposits should be based on their destructive behavior toward the surrounding bone rather than on their histologic characters.

Arthrodesis of Tarsal Joints.—MacLennan exposes the bones of the foot and splits the cuneiform, scaphoid and astragalus vertically, exposing all the joints. The various joints are erased by the osteotome and sharp spoon. The foot is put up with a lateral straight wooden splint, to be followed, when the sutures are removed in a fortnight's time, by a plaster-of-Paris case, which should be retained for eight weeks. After six weeks the child should be encouraged to walk, so as to stimulate the formation of the bone. A celluloid splint should then be fitted.

Fibroma of Abdominal Wall.—Stewart and Mouat report seven cases of so-called desmoid tumor or fibroma of the abdominal wall and analyze sixty-six cases from the literature. Apparently they do not undergo metastasis nor do they endanger life, but there is no evidence that they ever disappear spontaneously. There is no evidence that sarcomatous metamorphosis ever occurs.

British Medical Journal, London

2:983-1032 (Nov. 29) 1924

*Wet Winds and Early Phthisis. W. Gordon.—p. 983.
Prevention of Acute Rheumatism. F. J. Poynton.—p. 986.
*Spirochaetosis Icterohemorrhagica. G. Buchanan.—p. 990.
Cerebelar Abscess. J. S. Fraser.—p. 993.
Nasal Neuroses. N. Maclay.—p. 996.
Diagnosis of Affections of Ear, Nose and Throat. W. S. Syme.—p. 999.
Expectant Treatment of Uterine Sepsis. A. M. Jones.—p. 1001.
Acute Intestinal Obstruction Caused by Round Worms. E. C. Alles.—p. 1001.

Wet Winds and Phthisis.—Gordon discusses the influence of rain-bearing winds on the fate of early cases of phthisis. He presents data and diverse evidence, all clearly pointing to one and the same thing—a profound influence exerted on phthisis by prevalent, strong, rain-bearing winds, affecting both its incidence and its course. In respect of incidence, no mere climatic factor has so powerful an effect. Among social factors only occupation equals it in importance. The chance of becoming phthisical is at least twice as great in exposure to these winds as it is in shelter from them. As regards course, the chance of recovery is at least twice as great in

shelter from these winds as it is in exposure to them; therefore, he believes there is no detail of treatment more vitally important to the patient than the placing of him in effective shelter.

Spirochetosis Ieterohemorrhagica.—The discovery of an unrecorded natural habitat of the causal organism of spirochetal jaundice is reported by Buchanan. The natural habitat was found in an infected coal mine, and consisted of roof slime formed by organisms with a glutinous envelop which yielded a jelly-like or zooglea mass. Inoculation of the slime into guinea-pigs produced pronounced and fatal spirochetal jaundice. The viscid slime proved to be a favorable medium for the growth and continued life of *Leptospira*, which lived symbiotically with many other species of organisms. The observation has established a possible source of infection underground, where *Leptospira* existed in a situation inaccessible to rats.

Journal of Tropical Medicine and Hygiene, London

27: 247-258 (Sept. 15) 1924

*Schistosomiasis in Nigeria. N. A. D. Sharp.—p. 247.
*Splenomegaly. V. S. Hodson.—p. 247.
An Attempt at Growing Pathogenic Protozoa by Method of Collodion Sacs. P. Popoff.—p. 247.

Schistosomes in Feces.—According to Castellani the geographic distribution of *Schistosoma mansoni* and *S. hematobium* differs in certain respects, the former being only found in the West Indies and in South America, and the latter alone being found at the Cape. Elsewhere the two forms may have the same distribution, and this is the case in northern Nigeria, where the two types occur with almost equal frequency. In six months, at Kaduna, the lateral spined ova were found by Sharp in the feces of fourteen patients suffering from "dysentery," while the terminal spined ova were found in nine others suffering from pain on micturition and hematuria. In sixteen patients presenting symptoms of rectal or vesical bilharzia which cleared up after treatment with tartar emetic, the ova could not be found. Amebic dysentery is said to be common all over Nigeria, nevertheless, so far as natives are concerned, it rarely appears in virulent form. Liver abscess is decidedly uncommon.

Splenomegaly Caused by Bilharzia.—Hodson records the case of a boy whose spleen extended 4 inches below the costal margin. The liver was also enlarged and could be felt 2 inches below the costal margin. The circumference of the abdomen was 26¼ inches. In view of the history of recent fever and the splenic enlargement, but in spite of the fact that no parasites could be found in the blood, Hodson gave a course of quinin, which had no serious effect on the size of the spleen. While in the Sudan, Hodson had found that these cases were usually infected with *Bilharzia mansoni*. In the present case lateral spined eggs were found in the stools and tartar emetic treatment was given. At first the spleen was hardly affected by the treatment, but one year later the spleen could only be felt one-half inch below the costal margin; the liver was normal in size and the girth was reduced to 23¼ inches.

Lancet, London

2: 1049-1106 (Nov. 22) 1924

Renaissance of Midwifery. H. R. Spencer.—p. 1049.
*Spontaneous Splenic Rupture in Malarial Treatment. G. M. Rudolf.—p. 1057.
Case of Congenital Malaria Occurring in England. J. L. Jones and H. C. Brown.—p. 1058.
*Three Cases of Functional Mental Disorder Due to Toxemia from Bowel. J. Walker.—p. 1058.
*Iron Deficiency and Its Possible Relationship to Human Disease. J. P. McGowan.—p. 1060.
Inflation Test for Tubal Patency. V. Bonney.—p. 1062.
*Congenital and Acquired Dextrocardia. A. I. G. McLaughlin.—p. 1064.
Optic Atrophy Due to Late Syphilis, Intracisternal Injection of Mercurie Chlorid. G. O. Hume.—p. 1064.

Spontaneous Splenic Rupture in Malarial Treatment.—With the object of endeavoring to determine whether spontaneous rupture of the spleen would with any frequency be likely to occur in enfeebled general paralytics, or whether it will be sufficiently rare to remain merely a clinical curiosity in the history of malarial treatment, observations were made by Rudolf. First of all, it is necessary to know whether the organ is enlarged and soft in the paralytic. The weight of the spleen in health is greater than that of the spleen in general paralysis. The spleen in general paralysis also is usually harder than normal. From the pathologic evidence, therefore, it would appear that the occurrence of spontaneous rupture of the spleen in general paralytics treated with malaria must be even more infrequent than in nonparalytics suffering from malaria, in whom the accident is very rare. Although no definite statement can be made as to the frequency with which spontaneous splenic rupture is likely to occur in general paralytics treated with malaria until a far greater number of cases have been watched, it would appear from both the pathologic and the clinical evidence that the condition must be exceedingly rare and the risk of rupture in any individual person negligible.

Functional Mental Disorder Due to Intestinal Toxemia.—Walker stresses the point that his three cases confirm the importance of toxemia in producing symptoms and signs of disease affecting particularly the nervous system. Although the response to treatment in each case shows that the symptoms were due to disordered action of the bowel, when these cases came under observation the symptoms were more than suggestive of organic disease. One was a case of hypochondriasis; the second was a case of toxic psychosis simulating clinically general paralysis, and the third was a case of functional mental disorder resembling a case of organic nervous disease, in which alimentary toxemia was an important causal factor. Walker is convinced that toxemia of intestinal origin is more frequent than is generally accepted, its deleterious action being more easily produced and more marked when the general health is either reduced by previous illness or the powers of resistance impaired by such agencies as heredity, personal neglect and malnutrition, and unhealthy environment.

Iron Deficiency in Food Causes Disease.—McGowan suggests that iron deficiency in the food may be responsible for chlorosis and rickets and even play a rôle in the etiology of beriberi. Beriberi is usually attributed to a lack of vitamin B, but it may quite well be that the etiology of wet and dry beriberi are different, and up to the present there is no proof that they are the same. Roger has emphasized the dual action of iron in the body as a constituent of hemoglobin, and also as taking a part in the life functions of every cell in the body and especially of the liver cell. McGowan is inclined to support that view.

Dextrocardia.—McLaughlin's patient had complete transposition of the viscera, basal fibrosis, and apical cavitation of the right lung, with either primary or superadded tuberculous infection. The interesting points in the diagnosis were that: the dextrocardia could be explained either by complete transposition of the viscera or by the basal fibrosis. The amount of cardiac displacement was more than is usually found in uncomplicated inversion of the heart. It was increased by the dextroversion due to fibroid changes in the lung. The combination in one case of two causes of dextrocardia is probably very rare. The bulk of the evidence is in favor of the fibrosis being of pleurogenetic origin.

Medical Journal of Australia, Sydney

2: 389-412 (Oct. 18) 1924

Posterior Colpotomy. H. C. E. Donovan.—p. 389.
Thrombosis and Embolism. J. Morton.—p. 390.
Outdoor Antenatal Clinic. H. A. Ridler.—p. 391.
Clinical Utility of Hellige Colorimeter. A. T. R. Robinson.—p. 397.

2: 463-488 (Nov. 1) 1924

Duties and Responsibilities of General Practitioner in Regard to Infectious Diseases. W. G. Armstrong.—p. 463.
Radium in Treatment of Rodent Ulcers at Sydney Hospital. L. Johnston.—p. 467.
Peep into Past: Early Australian Surgery. N. J. Dunlop.—p. 471.

National Medical Journal of China, Shanghai

10: 283-359 (Oct.) 1924

Experimental Studies of False Anise. P. C. Kiang.—p. 283.
Morbid Histology of 1921 Manchurian Plague Epidemic. A. Fujinami.—p. 287.
Acute Intestinal Obstruction. L. S. Fan.—p. 307.
Antirabic Measures and Their Practical Application. C. S. Lin.—p. 319.
Case of Liver Abscess Treated with Surgical Solution of Chlorinated Soda. Y. Y. Ying.—p. 327.

Bulletin de l'Académie de Médecine, Paris

92: 1137-1198 (Nov. 18) 1924

Nervous System and the Pituitary. E. Gley.—p. 1138.
The French Universities in Canada. E. Sergent.—p. 1150.
Modern Interpretation of Suicide. M. de Fleury.—p. 1160.
*Vasomotor Disturbances in the Menopause. A. Béclère.—p. 1174.
*The Ovaries and Uterine Fibromas. C. Daniel and A. Barès.—p. 1185.
Recent History of Plague in Algeria. L. Raynaud.—p. 1188.
*Relation Between Whooping Cough and Influenza. M. Vernet.—p. 1192.

The Vasomotor Disturbances in the Artificial Menopause.—Béclère analyzes 700 cases in which the biologic inhibiting action of the roentgen ray on the ovaries had been observed. He concludes that hot flushes, the characteristic vasomotor disturbance in the menopause, are not due to retention in the blood of toxins, otherwise eliminated with the menstrual discharge. A disappearance of flushes usually precedes the return of the menses by a week to several months. Reappearance of genital hemorrhage, when the flushes still persist, cannot be accepted as menstruation; it may suggest the diagnosis of an intra-uterine tumor. These vasomotor disturbances seem to be produced by some upset in the balance of glandular functioning. The flushes are evidence of nonfunction of the ovaries.

Rôle of the Ovary in Pathogenesis of Uterine Fibroma.—Daniel and Barès found macroscopic lutein formations in the ovaries of all of eighteen patients with uterine fibroma examined. The amount of lutein elements was directly proportional to the size of the fibroma. They regard this as proof of the relation between the fibroma and the ovary. The lutein elements may also influence the growth of the fibromyoma.

Whooping Cough as Variety of Influenza.—Vernet is inclined to consider whooping cough as a variety of influenza entailing inflammation of the pneumogastric, with paralysis of the nerve. He believes that in treatment of whooping cough, and of spasmodic cough in general, no substances with a sedative action should be used, but stimulants to restore the normal excitability of the nerve.

Bulletin Médical, Paris

38: 1345-1372 (Nov. 29) 1924

Hydatid Cysts in Bones. M. Boppe.—p. 1351.
Hydatid Cysts of Muscles. A. Colombet.—p. 1352.
Surgical Treatment of Hydatid Cysts. M. Boppe.—p. 1353.
Surgical Treatment of Hydatid Cysts in the Lung. H. Welti.—p. 1355.
*Medical Impressions of America. M. Thalheimer.—p. 1357.

Medical Impressions of America.—Describing what Chicago offers of interest to the visiting doctor, Thalheimer is greatly impressed by the manifold important activities of the American Medical Association, "the wise guide for all physicians, ever seeking to guarantee more and more the integrity and scientific value of the profession." He comments among other things on the 600 periodicals received monthly in the library, and finds it an astonishing fact that the loaned journals are not only returned, but returned promptly on the specified date, which, he says, is absolutely unheard of in loan libraries in France. The American Medical Directory he styles the "incomparable year book of the medical profession." He emphasizes the power of this self-governing organization, and sees in it the proof that a medical association can by its own moral influence, without legislative intervention, regulate the exercise of the profession and constantly elevate the professional standard.

Comptes Rendus de la Société de Biologie, Paris

91: 1116-1178 (Nov. 28) 1924. Partial Index

*The Heart in Vitamin A Deficiency. P. Baude and L. Deglaude.—p. 1116.
Determination of Respiratory Interchanges. M. Ozorio de Almeida.—p. 1119.
*Action of Sugar on Respiratory Exchange. M. Ozorio de Almeida.—p. 1122.
*Error in Dosage of Calcium in Blood. Fabre and Détrois.—p. 1127.
*Influence of Splanchnic Nerve on Epinephrin Production. E. Gley and A. Quinquaud.—p. 1132.
*Purins in Diuresis in Diabetes Insipidus. Le Breton and Kayser.—p. 1135. Idem. Camus and Gournay.—p. 1137.
*Botulinus Anatoxins. M. Weinberg and P. Goy.—p. 1140.
Precancer Stage in Rabbits. E. Harde.—p. 1142.
*Staining of Special Species of Tubercle Bacilli. Devillers.—p. 1144.
*Cellular Anarchy. B. Sokoloff.—p. 1148.
*Megakaryocytes of the Bone Marrow. J. Firket and J. Bouille.—p. 1153.
*Influence of Fats on Tar Cancer. J. Lecloux.—p. 1155.
Cholera Vibrio Antigen is Heat Stable. P. Brutsaert.—p. 1157.
*Action of Sodium Oleate on Diphtheria Toxin. P. Nélis.—p. 1159.
*Capillaries and Diphtheria Antitoxin. Henseval and Nélis.—p. 1162.
Vasomotor Action of Blood Platelet Extract. J. Roskam.—p. 1165.
*Origin of Vagus Nerve Tonus. C. Heymans and A. Ladon.—p. 1167.
*Vasodilatation from Amino-Acids. L. Brouha and H. Frederieq.—p. 1169.
*Faradization of Vagus and Ventricular Chronaxia. H. Frederieq.—p. 1171.

Influence of Vitamin A Deficiency on the Heart.—The electrocardiograms from rats on a diet deficient in vitamin A, also histologic examination of the myocardium immediately after death, proved to Baude and Deglaude that the functioning of the heart and its structure were not appreciably modified by the avitaminosis.

Action of Sugar on Respiratory Exchange.—Ozorio de Almeida declares that administration of an adequate amount of sugar increases the respiratory exchange.

Source of Error in Estimation of Calcium in Blood.—Fabre and Détrois assert that the classic method for determination of calcium in the blood is not accurate because magnesium is closely combined with calcium oxalate. The spectroscope proved the error to be from 10 to 25 per cent.

Effect of Stimulation of Splanchnic Nerve on Epinephrin Production.—Gley and Quinquaud's experiments on dogs indicated that the epinephrin content of the blood in the suprarenal vein dropped considerably, immediately after stimulation of the splanchnic nerve.

Purin Metabolism in Diabetes Insipidus.—Le Breton and Kayser's observation of a patient, with a purin deficient diet, showed that the polyuria changes parallel to the content of purin bases. The amount of purin bases eliminated increases relatively more than the uric acid.

Purins as Cause of Diuresis in Diabetes Insipidus.—Camus and Gournay conclude from their research that a lesion in the tuber cinereum, and especially in its nuclei, causes a disturbance in the metabolism of nucleoproteins. They confirm on four diabetes insipidus patients their experimental finding of a decrease in the elimination of uric acid and increase of other purins. These purins are, in their opinion, the diuresis factor in diabetes insipidus.

Botulinus Toxin Treated with Iodin or Formaldehyd.—Weinberg and Goy assert that rabbits are perfectly tolerant to repeated injections of botulinus toxin treated with iodin to form an anatoxin. Animals immunized with this toxin soon produced botulinus antiserum. Still better results were obtained with the toxin treated with formaldehyd.

Method for Staining Special Tubercle Bacilli.—Devillers describes a technic to make evident in sputum slides species of tubercle bacilli which resist the usual methods of staining.

Cell Anarchy.—Sokoloff emphasizes that absorption through the lipoid membrane of the cells is reduced while the viscosity of the membrane is increased under the influence of radium. Observation of six patients, treated with radium for superficial tumors (nose, lip, arm), seemed to prove that the breaking down of the cells, the so-called cellular anarchy, is the result of changes in the lipoid membrane of the cells.

Rôle of Giant Cells in Bone Marrow.—Firket and Bouille's study confirmed that the megakaryocytes, giant cells of the marrow, are not phagocyte elements. Neither do they break down the hemoglobin. Formation of blood platelets seems to be their only function.

Influence of Oleic Acid on Tar Cancer.—Lecloux states that application of oleic acid delayed the development of experimental tar cancer in mice.

Action of Sodium Oleate on Diphtheria Toxin.—In Nélis' research sodium oleate proved to be a catalyzer for diphtheria toxin, definitely destroying the toxin (rabbits and guinea-pigs).

Rôle of Skin Capillaries in Reaction to Diphtheria Antitoxin.—Henseval and Nélis noted a more pronounced reaction to subcutaneous injection of diphtheria antitoxin in the rabbit, as compared with the guinea-pig. They ascribe it to the more sensitive skin capillaries in rabbits.

Origin and Mechanism of Tonus in the Vagus Nerve.—Heymans and Ladon conclude that the tonus in the vagus depends on the blood pressure, and is consequently of reflex origin. Their experiments showed that the reflex is transmitted to the bulbar center by Cyon's nerve.

Vasodilatation from Amino-Acids.—Brouha and Fredericq relate that amino-acids lowered the tonus in the peripheral, as well as in the visceral arteries in the dog.

Stimulation of the Vagus and Ventricular Chronaxia.—Fredericq found that faradization of the vagus increased the excitability of the ventricles in the heart of a frog. This was manifested by a marked reduction of chronaxia in ventricular extrasystoles.

Paris Médical

437-452 (Nov. 29) 1924

*Large Closed Cavities in Lungs. C. Roubier.—p. 437.
The *pn* and Its Use in Medicine. R. Foncin.—p. 442.
Methods for Ureterostomy. Le Dentu.—p. 445.
*Lead Poisoning in Ceramic Factories. Heim et al.—p. 447.
*Experimental Intravenous Injections of Milk. L. Goldenberg and L. Paunet.—p. 450.

Closed Tuberculous Cavities.—Roubier reports two cases with a large closed cavity in the right apex, the afferent bronchus being obliterated by fibroid tissue. In spite of the tendency toward healing in both men, aged 45, the cavity gave origin to secondary foci, a fatal caseous pneumonia in one, and fatal bronchopneumonia in the other.

Lead Poisoning in Ceramic Factories.—Heim, Agasse-LaFont and Feil examined fifty-two workers in factories making tiles for chimneypieces and other glazed work. Those who manufactured the enamel (and thus most exposed to lead poisoning) had been working at this trade for from twelve days to thirty-seven years, and none had lead colics. The characteristic lead line on the gums, however, was present in 50 per cent., while erythrocytes with basophilic stippling were found in 100 per cent. of these workers. In the other branches of the manufacture of ceramics the proportions were much less, but far from negligible.

Parenteral Injections of Milk.—Numerous experiments convinced Goldenberg and Panisset that intravenous injections of cow's milk are harmless in rabbits, guinea-pigs and mice. One rabbit bore without apparent injury three injections of 5 c.c. of milk with only a few minutes intervals. Another died at the second injection after this brief interval. Even the largest fat corpuscles are smaller than the erythrocytes.

Presse Médicale, Paris

32: 945-956 (Nov. 29) 1924

*Angina Pectoris in Cholelithiasis. Lian et al.—p. 945.
*Morphin Suspension in Treatment of Diseases. Sollier and Morat.—p. 948.
*Rôle of Osmotic Pressure of Proteins in Edema. P. Govaerts.—p. 950.
Vaccine Therapy in Chancroid. L. Cheinisse.—p. 952.

Gallstone Colic as Etiologic Factor in Angina Pectoris.—Lian, Weissenbach and Parturier, on the basis of seven personal cases, assert that cholelithiasis may cause among various other cardiac disturbances also the clinical picture of angina pectoris. They point out that in some cases with a predominant syndrome of angina pectoris the true etiologic factor, the gallbladder or bile duct colic, may not be suspected at first. The prognosis is exceedingly favorable unless there are organic complications.

Abrupt Suspension of Morphin in Treatment of Diseases.—Sollier and Morat observed four different cases (osteitis, dermatitis, psoriasis and intestinal-peritoneal syndrome) maintained by morphin given to relieve pain at first, and cured by suppressing the morphin. The primary affection, for which the administration of the narcotic had been required, was completely cured, without any specific treatment, as soon as the morphin was suspended. Abrupt withdrawal of the drug produces an intensive reaction, accompanied among other phenomena by a hypersecretion of all the glands. The changes in the blood are similar to the leukocyte reaction which occurs in most infectious diseases. It seems that the reaction is not only accompanied by elimination, with the morphin, of saturated cells, but aids the organism to overcome persisting infectious sequelae. They suggest the possibility of starting morphin treatment as a deliberate therapeutic measure in certain cases, to utilize the shock from its abrupt suspension.

Osmotic Pressure in Edema.—Govaerts' research on seventy-three subjects indicates a reduced osmotic pressure of the proteins in the blood, with higher capillary pressure, as the essential cause of edema in cardiac insufficiency, cachexia and nephritis. The upset of the osmotic balance may be explained by an increased concentration of salts in the plasma.

Schweizerische medizinische Wochenschrift, Basel

54: 1073-1096 (Nov. 20) 1924

Clinical Aspect of Brain Tumors. O. Veraguth.—p. 1073.
*Vaccination and Its Opponents. O. Stiner.—p. 1078.
Treatment After Prostatectomy. A. Ritter.—p. 1088.
Sino-Auricular Block. O. Schirmer.—p. 1089.

Vaccination and Its Opponents.—Stiner deals chiefly with the epidemiology of the recent smallpox epidemic in Switzerland (since 1921). It began in the German cantons in which vaccination is optional, and affected chiefly the young and the nonvaccinated: Only thirteen had been vaccinated among the 2,018 infected under the age of 20. The Swiss federal government ordered general vaccination, but the cantons failed to enforce it. The epidemic spread, but stopped at the borders of the canton of Freiburg, which has and enforces compulsory vaccination and revaccination. Three charts illustrate the coincidence of smallpox with the poorly vaccinated cantons. He publishes selected extracts from the literature of antivaccinationists—some of them "medical dadaists."

Pediatria, Naples

32: 1257-1304 (Nov. 1) 1924

*Malaria Nephritis. S. Maggiore.—p. 1257.
*Leukocytic Reaction to Child's Crying. C. Gallo.—p. 1265.
Susceptibility of Infants to Measles. Rapisardi and Pollitzer.—p. 1271.
Sedimentation Test. G. Bitsegalia.—p. 1274.
*Intradermal Horse Serum Test for Tuberculosis. G. P. Porta.—p. 1288.
*Scarlatinal Abscess. V. Ortoleva.—p. 1291.

Malaria Nephritis.—Maggiore reviews 130 clinical histories of children with malaria. Kidney disturbances were noted in 23.8 per cent. of them. Real nephritis or nephrosis is rare. In very young children, with the autumno-estival form, an acute interstitial nephritis was observed. The infiltrates consist of lymphocytes, eosinophils and larger mononuclear cells. No edema, no retention of nitrogen, and only slight cylindruria and albuminuria with lymphocytes are the clinical features.

Leukocytic Reaction to Child's Crying.—Gallo found a slight increase in neutrophils in new-born crying infants. The reaction lasted for about ten minutes.

Intradermal Horse Serum Test for Tuberculosis.—Porta found intracutaneous injections of normal horse serum of no diagnostic value in tuberculosis in children.

Scarlatinal Abscess.—Ortoleva reports the history of a boy, aged 2, who suffered a contusion of the shoulder four days before the onset of scarlet fever. An abscess developed at the site of the injury. Cultures of the pus on the usual mediums were negative. Inoculation of a filtrate in the Tarozzi-Noguchi medium led to a development of germs identical with those described by Di Cristina and Caronia.

Policlinico, Rome

31: 569-624 (Nov. 1) 1924. Medical Section

*Treatment of Acute Poliomyelitis. F. Sabatucci.—p. 569.
*Recurring Tuberculous Meningitis. C. Lotti.—p. 593.
Chronic Trophedema. F. Rietti.—p. 608. Conc'n.

Treatment of Acute Poliomyelitis.—Sabatucci reviews the modern methods of treatment of acute anterior poliomyelitis. He considers roentgen-ray treatment as the best, if applied early. Its action is probably chiefly due to decompression by absorption of the exudate. Diathermy and rhythmic galvanization are also useful.

Recurring Tuberculous Meningitis.—Lotti's patient is a woman, aged 27, who has suffered since her tenth year from repeated, grave, but benign attacks of meningitis with all the characteristics of a tuberculous form, except for the absence of tubercle bacilli.

31: 565-628 (Nov. 15) 1924. Surgical Section

*Error in Diagnosis of Gallstones. G. Ciaprini.—p. 565.
*Calcium Metabolism Under Roentgen Treatment. N. Piccaluga.—p. 572.
Intestinal Lymphosarcoma. G. Simoncelli.—p. 596.
*Fibroid Mesosigmoiditis. S. Solieri.—p. 615.

Tuberculous Glands Mistaken for Gallstones.—The three calcified glands were at the hilum of the liver and along the biliary passages in the young woman. The laparotomy had been done on the diagnosis of gallstones, and the two larger

glands were removed. Ciaprini summarizes from the literature four similar misleading cases, with recovery after ablation of the glands. In a fifth case, the jaundice proved fatal; the gland compressing the bile duct was a necropsy surprise. In two of the cases there was coexisting cholelithiasis.

Calcium Metabolism Under the Action of the Roentgen Rays.—Piccaluga examined serially seven patients under treatment with the roentgen rays for bone and joint tuberculosis, recording the calcium, phosphorus and chlorid curves. The mineral metabolism showed always pronounced changes under the influence of the rays, especially calcium and phosphorus. The effect varies so decidedly from person to person, that he ventures the paradoxic statement that the dose is immaterial; the individual organism is the decisive factor. The effect of the rays parallels that of sunlight and heat, and thus there is a summation of the action of these three agents when given together. This should be taken into account in working in the summer. The elimination of calcium and phosphorus is reduced under the rays in therapeutic doses, and is increased with larger doses. The modifications induced by the rays vary in intensity with the resisting powers of the organism; a weak dose may induce exaggerated elimination if the patient is debilitated. When only enough roentgen-ray units are given to induce retention, then the therapeutic, beneficial action of the rays is most pronounced; if the dose exaggerates elimination of calcium and phosphorus, the organism does not benefit from the exposures to the same extent. He suggests that this may prove a guide to prognosis and to the number of radiant units for the individual case.

Fibroid Mesosigmoiditis.—Solieri reports a case in a man, aged 37, in which cicatricial tissue had kinked the sigmoid flexure at two points. The stenosis was not complete, the symptoms of occlusion recurring with intervals of relief. In one of several other personal cases, inflammatory processes after abortion had spread to the mesosigma which had retracted as cicatricial tissue developed. All recovered after release of the sigmoid loop.

Riforma Medica, Naples

40: 1057-1080 (Nov. 10) 1924

*Angiokerratoma. U. Tomasone.—p. 1057.
Fracture of Both Clavicles. G. Tritto.—p. 1061.
*Pernicious Anemia in Typhoid. M. Stanzani.—p. 1063.
*Supraclavicular Bulging in Plethora. C. Trunecek.—p. 1066.

Angiokeratoma.—Tomasone observed a case of this sequela of chilblains in a tuberculous man. The affection begins with red spots which proliferate and resemble warts, but become blanched after pressure. The disease has been described by Breda, and called angiokeratoma by Mibelli. It seems that a predisposition of the cutaneous blood vessels is necessary. Their dilatation is followed by a hyperkeratosis. Tuberculosis might play some part in it, although he found no histologic indications of it in the lesions. In spite of lack of direct evidence, he is inclined to regard them as tuberculids.

Pernicious Anemia in Typhoid.—Stanzani draws a general parallel between the blood changes at the acme of typhoid and in pernicious anemia. He quotes the literature, and adds a case of his own. Its most remarkable feature was the presence of large amounts of urobilin in the serum.

Supraclavicular Bulging in Plethora.—Trunecek describes a protuberance of the supraclavicular spaces in a man with plethora. He regards it as a compensatory deposit of the blood, and observed reduction in the size of the bulge after large venesections. The protuberance is soft. Pulsation above the clavicle is palpable in arteriosclerosis.

40: 1081-1104 (Nov. 17) 1924

Italian Medical Congress.—This issue contains the proceedings of the Thirteenth Italian Congress of Internal Medicine (Milan). The surgical treatment of splenomegaly, suprarenal syndromes, and the diagnosis of nephritis were the chief topics.

Rivista di Clinica Pediatrica, Florence

22: 729-800 (Nov. 10) 1924

*Partial Congenital Hypertrophy. G. Baldazzi.—p. 729.
*Etiology of Measles. L. Auricchio.—p. 755.
*Soy Beans in Spasmophilia. M. Loreti.—p. 765.

Partial Congenital Hypertrophy.—Baldazzi describes in detail the congenital hypertrophy of the right upper and lower extremity in a child, and reproduces roentgenograms taken twenty-two months apart. He does not exclude possible endocrine causes, but emphasizes the probability of the influence of the nervous—especially the sympathetic—system.

Etiology of Measles.—Auricchio confirms Caronia's investigations on the etiology of measles. The gram-negative, filtrable diplococci grew exclusively anaerobically on the Tarozzi-Noguchi mediums. Agglutination and complement fixation tests with the serum from measles patients were positive.

Soy Bean Milk in Spasmophilia.—Loretti concludes, from seven cases, that an emulsion made from soy beans is preferable to cow's milk in the feeding of infants with the exudative or spasmophilic diathesis.

Medicina, Mexico City

5: 111-134 (Nov.) 1924

*Amebic Dysentery. F. Fernández Martinez.—p. 111. Conc'n.
*General Paralysis. Samuel Ramirez Moreno.—p. 119.
Treatment of Abortion. A. López Hermosa.—p. 120. Conc'n.
Gynecologic Massage. Miguel López Esnaurrizar.—p. 126. Cont'd.
Surgical Drainage of the Peritoneum. B. Bandera.—p. 131.
The Invaders of the Profession in Mexico. D. Gurria Urgell.—p. 135.

Amebic Dysentery.—Fernández Martinez concludes his study of the diagnosis and treatment of amebic dysentery with the advice to take ipecac in prophylaxis in countries where the disease is endemic. For this he recommends three pills a day of 0.025 gm. of the extract of the whole root. This corresponds to 0.10 gm. of pulverized ipecac and 0.015 gm. of emetin.

General Paralysis.—Ramirez Moreno discusses prophylaxis in particular, saying that the fate of the syphilitic may depend on the treatment he gets in the first month after infection, and that general paralysis seems to be increasing in prevalence, invading even the aboriginal races. In Mexico, the records of the asylums show the increase. He urges diagnostic lumbar puncture in every one suspected of either syphilis or neuropathy, as the only means to ward off general paralysis later.

Revista de la Asociación Médica Argentina, Buenos Aires

37: 1-103, 1924

Sequelae of Epidemic Encephalitis. J. C. Navarro.—p. 7.
Cesarean Section for Deformity of Pelvis from Tuberculous Coxitis. Iraeta and Medina.—p. 19.
*Cerebellar Tumor. C. P. Waldorp.—p. 26.

Cerebellar Tumor.—Waldorp's diagnosis of a gliomatous tumor in the middle lobe of the cerebellum in the woman, aged 28, was confirmed at necropsy. As no benefit was observed from treatment as for syphilis, an attempt was made to remove the tumor, but immediate bulbar syncope proved fatal. The bilateral nervous disturbances, and the alternating occurrence of the cerebellar symptoms, the prone position, with the legs extended, to relieve the intense headache, and the disturbances in the domain of the vegetative center for the vagus in the oblongata were special features of the case.

37: 1-34, 1924. Radiology Section

Improved Tubes for Roentgen Work. H. Franke.—p. 5.
Stenosis of the Pylorus and the Roentgen Rays. Heuser.—p. 15.
Intratracheal Injection of Iodized Oil. Lanari and Uslenghi.—p. 22.
Reaction of Absolute Degeneration. A. M. Marque.—p. 27.
Radiography of Lungs. Merlo Gómez and M. Balado.—p. 30.
*Electrocoagulation of Epithelioma in Tongue. Capizzano.—p. 33.

Cancer of the Tongue.—Capizzano applied electrocoagulation to an epithelioma of the tongue which was considered inoperable on account of the size, the enlarged glands in the vicinity, the age, and the poor general condition. He then excised the charred tissues, and the lesion rapidly healed while the glands returned to normal size. A small nodule six months later was treated in the same way, and the man has been clinically cured since 1918.

37: 55-208, 1924. Internal Medicine Section

*Case of Alleged Cure of Heart Block. Bullrich.—p. 61.
*The Aorta in Children. E. A. and J. J. Bereterviide.—p. 66.
Calcified Nodule in Bundle of His. C. P. Waldorp.—p. 74.

History of Citrating Blood for Transfusion. L. Agote.—p. 91.
Structure of Conducting System in Heart. P. Rojas.—p. 96.
*Sclerosis of Pulmonary Artery. Arrillaga et al.—p. 100.
*Paroxysmal Tachycardia. G. N. Martinez.—p. 114.
Diagnosis of Pleural Effusion. J. F. Merlo Gómez and A. J. Heidenreich.—p. 135.
Therapeutic Action of Intubation of Duodenum. Arrillaga et al.—p. 140.
Aberrant Lobe of Lung. Goyena and Bianchi.—p. 158.
Multiple Monstrosity of the Appendix. Galíndez and Bianchi.—p. 167.
Gallbladder Disease Simulating Appendicitis. H. J. d'Amato.—p. 177.
Gastrophysaic Granulomatosis. R. Novaro and A. E. Bianchi.—p. 187.
Jaundice from Retention in Father and Son Traced to Hookworm. F. Canevari and A. Bergman.—p. 198.

Heart Block.—Bullrich published in 1921 a "case of total heart block cured by mercurial treatment." The auricle beat had been 72 and the ventricle beat 24, and the man was restored to active life, and has been free from subjective symptoms during the four years since. Recent reexamination has disclosed that the supposed cure is only apparent. The block is still complete, with auricle beat of 78 and ventricle of 48.

The Aorta Sign of Inherited Syphilis in Children.—The Beretervides now have a record of roentgenologic study of the aorta in 462 children with inherited syphilis. It has confirmed their previous announcement that the aorta is wider and casts a darker shadow than normal in children with inherited syphilis. The normal maximal diameter of the aorta in children is 1 cm. up to the age of 8, and 1.3 cm. from 8 to 14. When it is found wider than this, or abnormally opaque, they insist that treatment for syphilis is not only justified but imperative. This aorta roentgen sign of syphilis in children has never failed in all their experience. An exaggerated second sound at the left margin of the sternum and in the second or third interspace, with peculiar features, usually accompanied this aorta sign. Aortitis in adults frequently can be traced back to early childhood, when it might have been cured if it had been detected and perseveringly treated.

Sclerosis of Pulmonary Artery.—Arrillaga, Tobias and Cabred presented at the meeting of the society held in honor of Vaquez a case of the "black cardiac" type and the necropsy findings in another case. Numerous photomicrograms accompany the article, confirming their view that the lesion in the pulmonary artery is primary and the work of the spirochete of syphilis. The changes in the bronchi and lungs are secondary although the symptoms from this may overshadow all others.

Paroxysmal Tachycardia.—Martinez compares the different theories in regard to the origin of paroxysmal tachycardia, and then analyzes thirty-one personal cases. In 80 per cent. a connection of the first onset with periods of physical stress (puberty, overexertion, menopause) was apparent. In 60 per cent. an inherited cardiovascular taint and in 30 per cent. an inherited mental, nervous or endocrine taint was beyond question. In one case the paroxysms of tachycardia alternated with attacks of asthma. In three cases the paroxysmal tachycardia was followed by defecation as at a crisis, in seven with a terminal polyuria, and in some of the others with a sweating crisis or lacrimation. He presents these and the other data with minute detail, without attempting to draw conclusions from them.

Semana Médica, Buenos Aires

31: 1005-1092 (Nov. 6) 1924

*Tuberculin Treatment of Tuberculosis. A. Viton.—p. 1005.
Index of Works on Dermatology and Syphilis by Argentine Physicians. A. A. Fernández.—p. 1060. Conc'n.
The Midwife in Fight Against Infant Mortality. P. Rueda.—p. 1076.
The Osgood-Schlatter Fracture from Trauma in Old Man. Ruiz.—p. 1078.
Gunshot Wound of Intestines and Bladder. Molina.—p. 1078.

Tuberculin Treatment.—Viton has long been the apostle of tuberculin treatment on the principle of restricting its use to the cases in which it is actually indicated, and restricting it to the doses that exert the maximal beneficial biologic action. He has 1,000 case histories traced for years, and here gives brief summaries of 374 to illustrate the benefit possible. He lists further the contraindications, emphasizing in particular that tuberculin should never be given in acute or subacute, febrile cases. Any laryngeal or intestinal lesion is an absolute contraindication to tuberculin treatment, and it should be suspended at the menstrual periods or with a "cold" or traumatism, depressing the vitality. Pregnancy, in itself, is not a contraindication. The cases best adapted are the torpid forms; the bilateral, slowly progressing, with little if any fever and a good general condition; the forms presenting anemia, dyspepsia, rheumatism or other manifestation of masked, insidious tuberculosis, and in tuberculous pleurisy free from a progressive tendency after resorption or evacuation of the effusion. A tendency to cyanosis, to hemoptysis, abnormally low blood pressure, or to softening or ulceration of the parenchyma, are further contraindications, and also the cases treated with artificial pneumothorax unless they have reached a permanently stationary stage with no signs of an active process for many weeks at least. He uses Koch tuberculin in ten dilutions of the 10 per cent., beginning with one part of this in a thousand million parts of physiologic sodium chlorid solution. The intervals are never less than three or four days and seldom more than a week. Appreciable subjective and objective improvement is usually manifest after fifteen or twenty injections; this represents two series, ten of one dilution and ten of the dilution next above. He suspends the tuberculin when clinical improvement is pronounced and persists. He has found it advisable to give an additional course every year afterward, usually with the dose when treatment was suspended. He warns that we must bear in mind that too small doses, or given at too long intervals, seem to induce allergy, the patient becoming oversensitive to the tuberculin, climatic vicissitudes, and other extraneous morbific influences. The benefit from tuberculin properly given seems to be evident in all of the vital processes, including gestation. The gain in weight is sometimes surprising.

Siglo Médico, Madrid

74: 417-440 (Nov. 1) 1924

*Treatment of Epilepsy. C. Juarros.—p. 417. Cont'd.
Etiology and Heredity of Multiple Births. I. Fedriani.—p. 420.
Behavior of Heart in Infectious Diseases. G. R. Gonzalo.—p. 422.
Anthrax. P. Muñoz Palop.—p. 423. Cont'd.
Vision After Congenital Blindness. H. Ferrer.—p. 427.

Treatment of Epilepsy.—Juarros declares that there is no symptom of any kind that stamps a convulsion as true epilepsy; he restricts the term to seizures on a basis of a characteristic mental state. All others are reflex pseudo-epilepsy, and when it is possible to discover and eliminate the primary condition starting the reflex, we may obtain surprising cures of apparently inveterate epilepsy. He cites instances of recovery after removal of a turbinate bone or adenoids, reducing glycosuria in a diabetic, modifying a congested liver, dropping tobacco, or regulating digestive functions. Reduction of intake of salt has improved many cases even without sedatives, but he usually gives bromid or phenobarbital with this and a predominantly milk-vegetable diet, insisting on a quiet mode of life, free from care but not idle. In 343 cases treated with bromid (5 to 10 gm.) no effect was apparent in 29, and the mental condition was not modified in any instance, but in 2 the seizures did not recur and in 125 the seizures were reduced by 50 per cent.; in 97 they were reduced, but to a lesser extent. In 214 cases treated by 0.10 to 0.30 gm. of phenobarbital, the seizures did not return, after dropping the drug, in 35 and in 120 they did not recur when the drug was kept up. In 40 cases the seizures were reduced by more than 50 per cent. and there were only two cases in which no effect was apparent.

74: 489-516 (Nov. 22) 1924

*Prophylaxis of Typhus. Cortezo and Serrano.—p. 489. Begun, p. 465.
*Vital Processes and Resistance. Lapuente e Ibarra.—p. 492.
*Urethral Fistula. Carrasco.—p. 494.
Case of Lateral Fracture of Skull. Fidalgo Tato.—p. 495. Conc'n, p. 526.
Acute Abdomen. Slocker de la Rosa.—p. 498. Cont'n.

Prophylaxis of Typhus.—Cortezo and Serrano give an illustrated description of a portable barracks (canvas) and apparatus for disinfection for suspects while their clothes are being sterilized.

Vital Processes Are Proportional to Resisting Powers.—THE JOURNAL mentioned, 1923, Lapuente e Ibarra's success in warding off "colds" by accustoming the patient to getting

his feet chilled, training him to dip his feet often in cold water. He noticed that in many cases of herpetiform disturbances in the scrotum and perineum or hemorrhoids, that as these yielded to local measures, conjunctivitis or other ocular affection developed. This occurred so regularly that he ordered application of cold water to the perineum once a day as a prophylactic measure, and found this invariably successful in warding off ophthalmologic affections. Those who have continued the practice of a daily cold application to the perineum have had continuously healthy eyes and none has developed cataract. His experience has thus convinced him of the intimate relations between the feet and the throat and between the perineum and the eyes. He presents further evidence which seems to show a similar close connection between the axilla and the heart, and a special tonic action on the heart of application of cool water, containing alcohol, to the axillae once a day.

Urethroperineal Fistula.—Carrasco discovered as the cause for the interminable persistence of the fistula the tip of a knife which had been broken off in the pubic region more than twenty years before.

Deutsche medizinische Wochenschrift, Berlin

50: 1603-1634 (Nov. 21) 1924

*Sedimentation and Blood Count in Tuberculosis. J. Weicksel.—p. 1603.
Pupillary Nystagmus. S. Bettheim.—p. 1605.
Glucometer for Determination of Urine Sugar. H. Citron.—p. 1606.
Treatment of Rickets. K. Pilling.—p. 1608.
Spasm of Esophagus in Children. W. Pickarek.—p. 1609.
*Water Metabolism and the Skin. E. Pulay.—p. 1610.
Pathology and Training of Children. J. K. Friedjung.—p. 1611.
Synthesis of Disaccharids. F. Wrede.—p. 1611.
Treatment of Psychoneuroses. K. Schmitz.—p. 1612.
Massage in Myalgia and Neuralgia. Bieling.—p. 1613.
Survival of Gonococci in the Body. H. Hirsch.—p. 1613.
Apparatus for Irradiation and Heat. Strauss.—p. 1614.
Constitution and Gynecology. W. Simon.—p. 1615. Cont'd.
Protein Treatment. A. Buzello.—p. 1616. Cont'n.
Prussian Law on Contagious Diseases. G. Hoch.—p. 1618.
*Protection of Children Against Venereal Diseases. M. Gumpert.—p. 1618.
Tuberculosis Sanatoriums and Social Insurance. Reckzeh.—p. 1619.
Contracts with Publishers. J. Schwalbe.—p. 1620. Conc'n.

Sedimentation and Blood Count in Tuberculosis.—Weicksel is cautious in drawing prognostic conclusions from the sedimentation test, except in extreme cases (under thirty minutes), where the prognosis is unfavorable. The sedimentation is sometimes slower in pneumothorax because of the increase in the number of erythrocytes. Differential blood counts gave more reliable results. Leukocytosis with lymphopenia is unfavorable.

Water Metabolism and the Skin.—Pulay reports on two patients with pruritus (one a small child with eczema, the other a woman after naphthalin dermatitis). Both had a low water elimination. The itching disappeared after diuresis was obtained by theobromin-sodium salicylate and a thyroid extract.

Protection of Children Against Venereal Diseases.—Gumpert reports on twelve cases of venereal infection in children observed in the last few weeks in a clinic. Overfilled living rooms and rape were the common causes. In Berlin, in 1920, 150,000 families lived in one room apartments.

Klinische Wochenschrift, Berlin

3: 2129-2176 (Nov. 18) 1924

Basal Metabolism in Children. K. Sellgruber.—p. 2129.
*Vitamin Content of Milk. L. F. Meyer and E. Nassau.—p. 2132.
*Colon Bacillus Pyelitis. L. Bitter and M. Gundel.—p. 2141.
Roentgen Examination of the Apices. Gäbert.—p. 2144.
*Agglutination. W. Seiffert.—p. 2144.
*Tabes and Mesaortitis. S. Kessler.—p 2146.
*Roentgen Surface Treatment. E. Kuznitzky.—p. 2148.
"Univitelline Twins with Different Color of Eyes." G. Cohen.—p. 2150
Reply. J. Bauer.—p. 2150.
"Detoxication by Glucose." H. Pribram.—p. 2150.
*Cancer Formation. R. Bierich.—p. 2151.
*Motility of Bile Ducts. H. Kalk and W. Schöndube.—p. 2151.
The So-Called Abderhalden Reaction. Serejski.—p. 2152.
Posterior Costomediastinal Pleurisy. O. Laufer.—p. 2152.
Pneumothorax Treatment. H. Ulrici.—p. 2154.
Pregnancy Toxicoses. A. Mayer.—p. 2157.

Vitamin Content of Milk.—Meyer and Nassau observed cutaneous hemorrhages in every third and scurvy in every seventh child treated in the children's asylum in Berlin. After addition of large amounts of fruit juices (vitamin C) the incidence of these conditions was reduced. They found that the special "children's milk" supplied by a dairy company failed to prevent experimental scurvy in guinea-pigs. The oxidizing preservatives or pasteurization had destroyed entirely the vitamins in the milk. They also found that raw milk from a goat fed with green food was almost without vitamins. Therefore, goat's milk anemia may be a deficiency disease.

Colon Bacillus Pyelitis.—Bitter and Gundel found a pronounced agglutination similarity between the seventy-two groups of colon bacilli tested. The majority of colon strains cultivated from the urine do not hemolyze.

Agglutination.—Seiffert reports on experiments made by Yu with bacilli of the typhoid group. The latter author found that a certain threshold of surface tension is necessary for the agglutinability of the germs.

Tabes and Mesaortitis.—Kessler found thirty-nine cases of syphilitic mesaortitis among fifty-nine necropsies of tabes. The affection of the aorta is usually milder than in other syphilitics because the patients cannot lead a strenuous life, are treated for syphilis, and because the visceral sensibility is impaired.

Roentgen Surface Treatment.—Kuznitzky uses exclusively filtered roentgen rays (0.5 mm. aluminum) for treatment of dermatoses. This method prevents the erythema, with subsequent remote atrophy of the skin and teleangiectasia which is frequent with the unfiltered rays. Leschinski's auto-experiments confirmed this view.

Cancer Formation.—Bierich regards cancer formation as the result of processes on the surface of cell structures. They induce production of lactic acid, which diffuses and is buffered to a lactate. It destroys the collagen fibers in weakly acid reaction, releasing silicon compounds. The subsequent alkaline reaction due to the progressing cancer cells redissolves these compounds, and dehydrates the fibers.

Motility of Bile Ducts.—Kalk and Schöndube obtained a concentrated "gallbladder bile" from ten to twenty minutes after subcutaneous injections of a pituitary extract. The results were better than with the magnesium sulphate or peptone method, and the bile was not mixed with these drugs.

3: 2177-2224 (Nov. 25) 1924

*Cell Division. K. Peter.—p. 2177.
Electrolytes in Blood and Tissues. K. Gollwitzer-Meier.—p. 2181.
*Haff Disease and Paralytic Hemoglobinuria of Horses. S. Meyer.—p. 2189.
Large Doses of Iron in Anemia. Z. Rauch.—p. 2190.
Standardization of Roentgen Dosimeters. R. Jaeger.—p. 2191.
Chemistry of Gaucher's Disease. E. Epstein.—p. 2194.
Experimental Testing of Hair Tonics. M. Jessner.—p. 2195.
"Medicolegal Import of Blood Groups." G. Strassmann.—p. 2195.
"Caloric Labyrinth Test." Thielemann.—p. 2195. Reply. Fujimori.—p. 2196.
*Wassermann Reaction After Sugar Ingestion. Izar and Fortuna.—p. 2196.
Determination of Sodium in Serum. P. Lebermann.—p. 2196.
Supraclavicular Deposits of Fat in Gout. E. Ebstein.—p. 2198.
Diagnosis of Lung Tumors. H. Deist.—p. 2200.
Vaccination in England. J. Breger.—p. 2206.

Cell Division.—Peter demonstrated in the kidneys of larvae of salamanders that the signs of specific function stop during mitosis. Increased action of the cells prevents mitosis (although not amitotic division); inactivity promotes mitosis. The specific action of the cells is diminished in cancer. This may be one reason for the excessive proliferation.

Haff Disease and Paralytic Hemoglobinuria of Horses.—Meyer draws a parallel between the epidemic rigidity of muscles observed among the fishermen of the Haff and the paralytic hemoglobinuria of horses. Both affections have an unknown etiology. She points out that a similar case had been described by Meyer-Betz. Muscles might be one of the sources for the hemoglobin found in the urine.

Wassermann Reaction After Sugar Ingestion.—Izar and Fortuna found that ingestion of 100-200 gm. of cane sugar on a fasting stomach decreased the nonspecific fixation of complement, and increased the specific Wassermann reaction in syphilis. A purgative (40 gm. of sodium sulphate), given

the night before, increased the effect which was apparent between the first and the sixth hours after the sugar. Other serologic reactions were influenced similarly by the sugar but not by the laxative.

Medizinische Klinik, Berlin

90: 1639-1672 (Nov. 23) 1924

Vegetative Reflexes. F. Glaser.—p. 1639.
*Intracutaneous Injections. W. G. Müller.—p. 1643.
Vaccination Against Infections. A. Menzer.—p. 1644.
Mistakes in Otologic Practice. L. Soyka.—p. 1646.
*Brain Abscess After Alveolar Periostetitis. L. Sussig.—p. 1648.
*Pernicious Anemia and Gastric Acidity. L. Detre.—p. 1649.
*Congenital Syphilis. S. Buttenwieser and H. Biberfeld.—p. 1649.
Cancer and Roentgen Treatment. M. Fraenkel.—p. 1653.
Acute Myelosis with Gastric Bleeding. W. Roller.—p. 1654.
Aortic Affections in the Young. A. Schneider.—p. 1655.
*Inflammation. P. Grawitz.—p. 1656.
Obstetric Breviary. F. Eberhart.—p. 1659. Conf'n.
Recent Works on Hygiene. H. Ziemann.—p. 1661.

Intracutaneous Injections.—Müller determined the coagulation temperature of the serum before and after intracutaneous injections of physiologic solution of sodium chlorid. He found a regular drop of 1.2-1.5 C. if the patient was kept quiet and not exposed to stimuli acting on the skin.

Brain Abscess After Alveolar Periostetitis.—Sussig observed a case of abscess of the temporal lobe after alveolar periostetitis of the left upper jaw. The necropsy findings gave evidence for a direct migration of the process through the temporal bone. He believes that the forced opening of the mouth at the operation caused the spreading of the process.

Pernicious Anemia and Gastric Acidity.—Detre confirmed anacidity in forty-eight pernicious anemia patients. Two patients with blood resembling pernicious anemia had free hydrochloric acid in the stomach. Both were most probably other affections.

Febrile Liver Affections in Congenital Syphilis.—Buttenwieser and Biberfeld observed fever of long duration in two boys, aged 10 and 11, with enlarged liver and congenital syphilis. The diagnosis of tuberculosis had been made in both patients, although one had no tuberculosis at all, and the other only as a complication. The fever in these cases is high, daily intermittent, and lasts for days or weeks. Chills and night sweats may occur. Specific treatment of the syphilis is of great value.

Inflammation.—Grawitz reviews the theories of inflammation, and deals especially with his investigations on the formation of spindle cells from the intercellular substance.

Münchener medizinische Wochenschrift, Munich

71: 1635-1672 (Nov. 21) 1924

Bacteriology at Necropsies. E. Fraenkel.—p. 1635.
*Eyesight in Münster Students. Podesta.—p. 1637.
*Postoperative Irradiation. L. Simon and W. Wollner.—p. 1639.
Treatment with Ergot. Schömann.—p. 1642.
Strophanthin in Treatment of the Heart. Suchier and Richter.—p. 1643.
*Concentrated Sugar-Milk Feeding. A. Bunnemann.—p. 1644.
*"Iron Reaction in Progressive Paralysis." H. Spatz.—p. 1645.
"Anatomy of Trendelenburg's Phenomenon." R. Sievers.—p. 1647.
Alleged Poisonings with Stannous Hydride. G. Joachimoglu and F. Paneth.—p. 1647. Reply. Vaubel.—p. 1648.
Epidemiologic Institute at Saratof. H. Zeiss.—p. 1648.
Diabetes Mellitus. F. Umber.—p. 1649.
History of Development of Medicine. G. Honigmann.—p. 1652.

Eyesight in Münster Students.—Podesta examined the eyesight in 687 university students. Only one third had vision of over 5/6. Color blindness or weakness (red-green) was found in about 10 per cent. of these young men. He saw no case of color blindness in 640 girls over 11 years of age.

Postoperative Irradiation of Cancer of Breast.—Simon and Wollner recommend irradiation with small doses (far below the cancer dose) after radical operations on cancer of the breast. The treatment should be given at first every six weeks, later at longer intervals for a year or year and a half.

Concentrated Sugar-Milk Feeding.—Bunnemann confirms the good results of whole milk containing 17 per cent. cane sugar in mixed infant feeding. It is indicated for infants who drink little (lazy or weak), the prematurely born, the convalescent, or those with underweight, pylorospasm or enuresis. He added one half to two thirds of the amount required to bring the total volume of food up to the standard quantity of breast milk, taking one sixth of the body weight as the normal standard.

"Iron Reaction in Progressive Paralysis."—Spatz has had so far only reliable results with his microscopic iron reaction in the brain in general paralysis cases.

Wiener klinische Wochenschrift, Vienna

37: 1205-1228 (Nov. 20) 1924

*Metastatic Hystero-Adenosis. J. Halban.—p. 1205.
*Movability of Pleural Effusions. R. Lenk.—p. 1206.
*Reversible Hemolysis. W. Starlinger.—p. 1208.
*Neuroses and Unsuitable Housing. M. Herz.—p. 1213.
*Physiologic Pregnancy Bilirubinemia. Herrmann and Kornfeld.—p. 1215.
"Treatment of Diabetes." F. Depisch.—p. 1216.
Hydrops and Its Treatment. P. Saxl. Supplement—pp. 1-10.

Metastatic Hystero-Adenosis.—Halban believes that the heterotopic growth of uterine mucosa is due to a regular lymphogenous metastasis. He found inclusions of uterine glands in the regional lymphatics. Sampson's hypothesis is theoretically possible only in intraperitoneal localizations of these growths.

Movability of Pleural Effusions.—Lenk examined roentgenologically nineteen patients with pleuritic exudates of various etiology (tuberculosis, cancer, etc). The fluid moved quite rapidly in all but two of the patients when they changed from the erect to the reclining posture. The change is not as immediate as in pneumothorax. The phenomenon may differentiate an exudate from a fibrous pleuritis, and disprove an encapsulated exudate or other processes of the lower lobe.

Reversible Hemolysis.—Starlinger explains the reversibility of hemolysis after addition of salts by absorption of kations on the negatively charged stroma and their consequent positive charge. This draws back a part of the dissolved hemoglobin which is charged negatively by the anion. Salts of heavy metals produce readsorption of hemoglobin on the stroma in concentrations which would otherwise coagulate a pure solution of hemoglobin.

Neuroses and Unsuitable Housing.—Herz publishes the histories of five patients to illustrate the significance of the distress in housing conditions as a provoking cause of neuroses and psychoses. The content of the psychosis was also influenced by it.

Physiologic Pregnancy Bilirubinemia.—Herrmann and Kornfeld found high bilirubin figures in the serum of all the 128 pregnant women they examined. The reaction was more pronounced in the first months of pregnancy.

Zentralblatt für Gynäkologie, Leipzig

48: 2513-2560 (Nov. 15) 1924

Intra-Uterine Transplantation of the Ovary in Sterility. F. Benesch and R. Köhler.—p. 2513.
Position of Isthmus Uteri During Labor. E. Weinzierl.—p. 2521.
*Effect of Placenta on Mammary Gland. E. Philipp.—p. 2527.
*Decidua in Nonpregnant Uterus. W. Schiller.—p. 2529.
*Passage of Dye from Mother to Fetus. C. Holtermann.—p. 2536.
Kottmann's Photochemical Reaction. Better and Heller.—p. 2539.
Modified Folding, Self-Holding Speculum. E. Sachs.—p. 2543.
Conception with Intact Hymen. C. Flechtenmacher.—p. 2546.

Influence of Placenta on Mammary Gland.—Philipp describes, among others, two cases in which fragments of placenta, size of a hazel or walnut, were inserted in the abdominal wall of women with carcinoma of the genitalia. In one woman, aged 42, twinges in the breasts and colostrum from both glands appeared the second day after the grafting. This condition persisted several weeks. True lactation did not occur. In another woman, aged 48, the implantation of placental tissue, from a three months' pregnancy, also caused twinges and secretion of colostrum. These cases confirm Halban's statement as to the stimulating action of the placenta on the mammary gland.

Three Cases with Decidua in Nonpregnant Uterus.—Schiller reports three cases of this kind in women, aged from 43 to 49. Lutein cells were present in the ovaries, as usual with a decidual reaction in the uterine mucosa. In one instance a periovaritis caused the local irritation responsible for the decidua production; in another, the decidual reaction was analogous to climacteric hyperplasia, in which the glands

resemble Opitz' "pregnancy glands." Histologic examination did not reveal the causal factor in the third case.

Passage of Methylene Blue from Mother to Fetus.—Holtermann's research showed the dependence of the passage of methylene blue, from the maternal organism to the fetus, on the mode of application of the dye. The persistence of the dye in the fetus coincided with the elimination of the dye by the maternal urine. The passage of the dye through the placenta was not influenced by the age of the woman, the number of her previous pregnancies, nor by the sex and the age of the fetus. Labor pains and delivery seemed to be without effect on the passage of the dye. Elimination of the methylene blue by the fetal kidney did not occur, even when the maternal blood was overcharged with the dye. The colorless derivative of methylene blue in the amniotic fluid, from the fifth to the ninth month, may be a product of the epithelium of the amnion.

48: 2561-2624 (Nov. 22) 1924

Operations for Vesicovaginal Fistula. L. Fraenkel.—p. 2562.
Uterus to Close Vesicovagino-Uterine Fistula. Thomson.—p. 2566.
Urethroplasty in Women. P. Haendly.—p. 2568.
Anastomosis Through Vagina to Correct Vagino-Ureteral Fistula. N. Kakuschkin.—p. 2573.
*Bladder Papillomatosis. C. Schoenhof.—p. 2576.
*Prognosis in Pregnancy Pyelitis. H. Naujoks.—p. 2581.
*Postoperative Retention of Urine. E. Schlesinger.—p. 2585.
"Hexamethylenamin in Retention of Urine." K. Laemmle.—p. 2587.

Roentgenotherapy of Papillomatosis of the Bladder.—Schoenhof attained excellent results with the roentgen rays in a woman, aged 64, with recurring papillomatosis of the bladder. Three papillomas had been removed through a suprapubic incision seventeen months before. Relief from the painful micturition and from bleeding in the bladder was manifest four days after the first exposure, and a complete clinical recovery followed three days later. The roentgenray treatment should be preferred, Schoenhof believes, to suprapubic cystotomy (22-25 per cent. recurrences, and 3 per cent. mortality: Dobrotvorsky). Removal with the cystoscope has a high rate of recurrences (50 per cent. in three years). Electrocoagulation, with recoveries in 90 per cent. of the cases, was followed by a fatal issue in seven cases, and with perforation of the bladder in one instance. It may be expected that the recurrence rate will be markedly lower with roentgenotherapy as there can be no inoculation with this. She used 60 per cent. of a skin dose, and repeated the irradiation after six weeks, and again three months later. A fourth exposure was required after ten months for some very small papillomata. A subsequent cystoscopy showed complete disappearance of the papillomas.

Prognosis in Pregnancy Pyelitis.—Naujoks states that out of 37 women with a pyelitis history from two to twenty years before, one died during a recurrence of the disease; 23 recovered; 8 were positively not cured, and 5 probably not. Among 23 cured, 19 were afterwards once or several times pregnant, with recurrences in 8 instances. Out of the 4 women that had no later pregnancy, 2 had several recurrences. Naujoks assumes that the danger of this disease consists in a general infection from the urinary tract. Conservative treatment is advocated.

Saline Injections in Retention of Urine.—Schlesinger has succeeded in combating postoperative retention of urine by intravenous injection of 10 c.c. of 40 per cent. saline solution (in ten cases spontaneously, in nine after from five to thirty minutes, and in one instance not until after five hours). In four patients the injections were without result. He is inclined to ascribe the success of these injections, as well as from injection of hexamethylenamin, to a psychic effect. The retention may be caused by fear of pain during urination.

Casopis lekaruv ceskych, Prague

63: 1689-1732 (Nov. 22) 1924

Congenital Elevation of Scapula. B. Niederle.—p. 1689.
*Death in Boxing. A. Rozmaric.—p. 1693.
*Tumors of Nasopharynx. B. Kryze.—p. 1696. Conc'n.
*Malaria Treatment of Paralysis. H. Bondy.—p. 1699. Conc'n.
Treatment with Animal Charcoal. J. Pátek.—p. 1702.
Pathogenesis of Gout. J. Parousek.—p. 1703.
Review on Tuberculosis. R. Kimla.—p. 1708.

Death in Boxing.—Rozmaric reports the history and necropsy findings of an amateur boxer, 20 years of age, who died after being hit correctly—in the sixth round—in the temporal region. The skull was thin (average 3 mm.). Meningeal hemorrhages and shock accounted for the death.

Tumors of Nasopharynx.—Kryze observed two cases of cancer of the nasopharynx with a deep origin around the eustachian tube. The process is difficult to diagnose in the beginning. Impaired hearing on one side, relaxation of one side of the soft palate, neuralgia which is sometimes excruciating, and a prominence and redness of the opening of the eustachian tube are comparatively early symptoms. Signs of nasopharyngeal tumors such as nasal voice, epistaxis, lesions of the nerves from the invasion of the base of the brain are late manifestations. Insufflation of the ear through the eustachian tube is possible for a long time. Irradiation seems to be the only hope for these patients.

Malaria Treatment of Paralysis.—Bondy has five years of experience of treatment of progressive paralysis with malaria inoculations. He observed in a few cases improvement of the pupil reaction and of the knee-jerk. The handwriting and speech were more constantly improved.

Acta Medica Scandinavica, Christiania

Supplement VII: 1-376, 1924.

*Medical Congress of the Northland. O. Scheel, Secretary.

Transactions of Scandinavian Medical Congress.—The fifty-two communications presented at the Eleventh Medical Congress of the Northland, held at Christiania in July, 1923, are given in full, with the discussions—all in French, German or English. Thyroid disturbance was the leading topic for discussion.

Finska Läkaresällskapets Handlingar, Helsingfors

66: 699-848 (Sept.-Oct.) 1924

Pathologic Anatomy of Acute Chorea. H. Castrén.—p. 699.
Motor Disturbances in Tabes. F. Leiri.—p. 712.
Esbach's Albuminimeter for the Urine. G. Tötterman.—p. 722.
Gallstone Ileus. C. V. Sandelin.—p. 731.
*Influenza and Epidemic Encephalitis. J. Hagelstam.—p. 744.
Diseases of the Biliary Passages. T. W. Tallqvist.—p. 759.
Empyema Patients as Insurable Risks. F. Saltzman and O. Sievers. —p. 781.
Civil Responsibility of the Mentally Abnormal. E. Ehrnrooth.—p. 800.

Relation Between Influenza and Epidemic Encephalitis.—After the outbreak in 1918, influenza in Helsingfors showed a marked tendency to become periodically epidemic, and to appear in forms previously unknown or rarely seen. Hagelstam attributes to influenza infection the epidemic encephalitis and other diseases of the nervous system which occurred. He emphasizes as typical among these the acute encephalomeningitis among young persons; the cerebrospinal fluid was cloudy but sterile, and recovery was usual. As a rule, the mild influenza infections tended to localize in the nervous system, the more virulent infections in the respiratory organs.

Hygiea, Stockholm

86: 753-800 (Nov. 15) 1924

*Volvulus in Pregnancy. R. Roman.—p. 753.
Fetus with Distended Bladder. H. Westermark.—p. 778. Conc'n.
Radiotherapy in Some German Gynecologic Clinics. A. Westman. —p. 780.
Urethral Tumors and Diverticula. C. D. Josephson.—p. 783.

Volvulus of Cecum and Ascending Colon in Pregnancy.—Roman found on record only six cases, with a possible seventh, to which is added his own case. Recovery followed in the four instances of surgical intervention within three days. He believes that, with an anatomic predisposition to a volvulus, perhaps aggravated by the physiological changes in the abdomen during pregnancy, the gravid uterus may be the primary cause of torsion of the cecum and ascending colon.

Ugeskrift for Læger, Copenhagen

86: 853-876 (Nov. 6) 1924

Chronic Cyanosis and Stasis in the Legs. Kissmeyer.—p. 853.
Erythema or Chilblains? Haxthausen.—p. 855. Idem. Peulsen. —p. 856.
Erythema? Fischer.—p. 857. Idem. Linnet.—p. 858. Idem. Grevsen.—p. 858. Idem. Bisgaard.—p 859.
Percussion: History and Technic. S. Bang.—p. 859.
The Günzburg Test with the Ewald Test Meal. J. Christiansen.—p. 860.
Moellgaard's Gold Treatment of Tuberculosis. Editorial.—p. 873.